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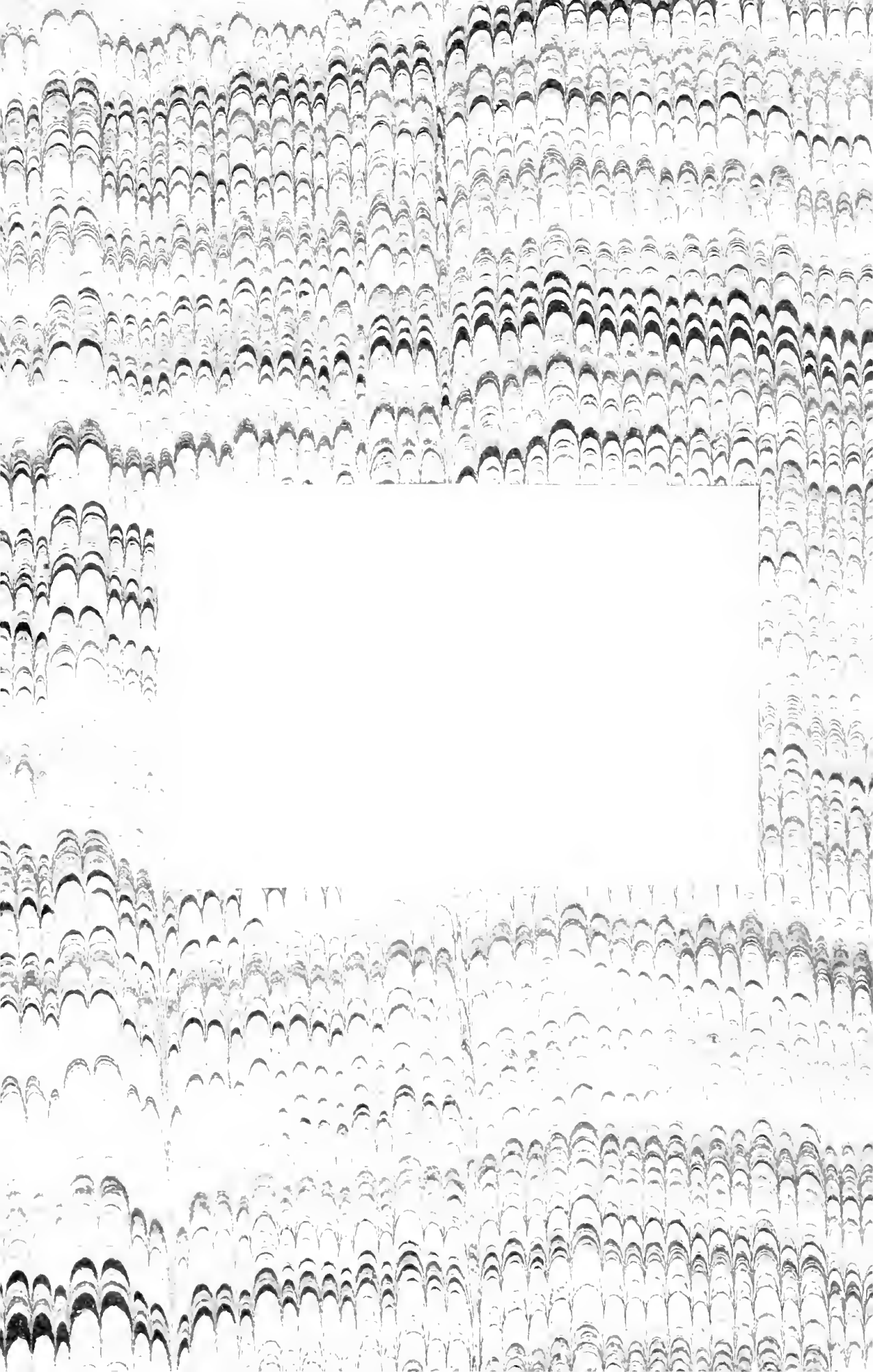

PRACTICAL HINTS

ON

DAIRYING,

OR,

MANUAL

FOR

BUTTER MAKERS.

BY

JOHN P. CORBIN,

Whitney's Point, N. Y.

1871.

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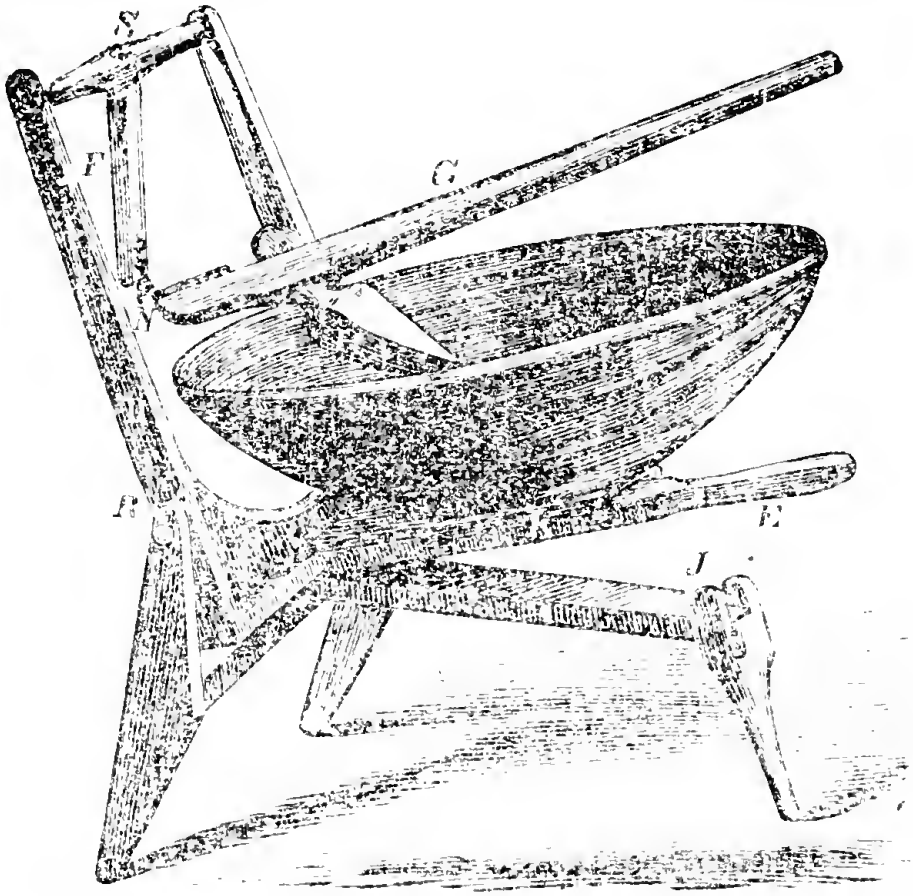
Extracts may be made from this Book by giving credit to Corbin's Practical Hints on Dairying.

PREFACE.

In laying this little pamphlet before the public, I purpose to give the reader a few practical ideas relative to dairying, touching briefly on different points pertaining to the business, such as I have proved in dairying with twenty-five to thirty-five cows for many years, making butter, working and packing it myself; also, the benefit of observations made in visiting many of the most noted dairymen, and butter factories of several States, learning the results of the experiences of many. I do not flatter myself that this or that is the only correct way of procedure; neither do I claim that all improvements are at an end. It is believed that the following pages embrace the most practical treatise on butter making that has yet been published, as well as the more improved and advanced methods of making butter as practiced by the best butter-makers of this country.

These experiences and observations have enabled me to construct the EUREKA BUTTER WORKER, which is illustrated and described in the following pages. With it, any dairy-woman can wash, salt and work hard butter, easily, expeditiously and perfectly, exactly on the hand-ladle principle, the same manner as with a ladle in the hands, but much easier, fastter and more thorough, besides not as liable to injure the grain of the butter, as the most careful person is with a hand ladle.

EUREKA BUTTER WORKER.



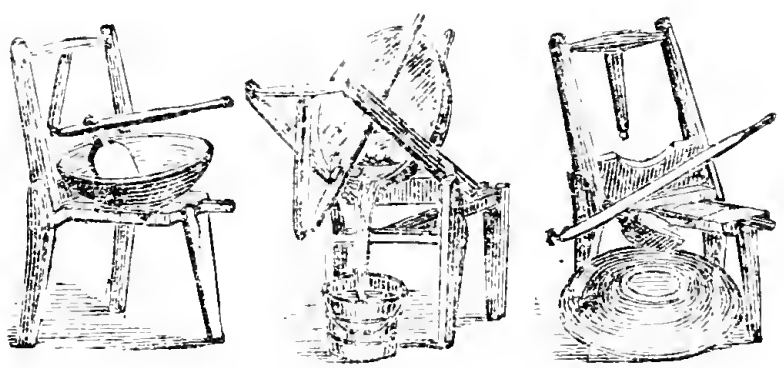
Patented Aug. 9, 1870.

Description of Cuts.

There is a light iron plate that may be screwed on the bottom of any common round butter bowl of any size, and will be an advantage to any butter bowl, by making it stand more steady on any table, besides it will be a protection against its splitting.

K are iron slides fastened on each edge of the platform for the plate to slide in, which will hold the bowl securely on the machine, and allow it to be easily revolved either way. The bowl may be removed from the machine as handily as from a table. H is a ladle

similar to a hand ladle, but is much larger. It is mortised through the lever G, which hooks into the swivel eye N, fastened on the pendulum F, which is fastened in the roller S, and allows the lever to be moved in any direction, and the ladle placed in every part of the bowl, and worked up and down, from one side of the bowl to the other, also forward and backward, in fact, every manner desirable for working butter—cutting, pressing and turning the butter every way, the same as with a hand ladle, but much faster and more easy. C is a solid rest for the bowl to stand firmly against, which will support it from breaking down, or springing under the pressure of the lever ladle. The frame D, with a platform projecting from the bottom of it, that the bowl stands upon, is hung on screws R in such a manner that it may be tipped by the strength of one finger, to drain the buttermilk or water from the bowl, with no possibility of its slipping or falling off, and the ladle will prevent the butter from spilling out. The platform is fastened down to the stool by the spring J hooking on the catch E on the handle. The machine is light, convenient to carry, nothing liable to get out of order, very simple, and as handily washed and dried as any bowl and ladle. For prices and further descriptions see back part of the book.



Working Position. Draining. Detached.

INTRODUCTION.

The dairy business, exceeds that of any other of the agricultural interests, especially in the Northern States; and it has by the constantly increasing demands for its products, grown to be a business of enormous magnitude, and it employs an immense number of operators.

> And now the dairy claims her choicest care,
> And half the household find employment there.

It requires a vast amount of capital to carry on dairying, as well as much hard labor, care and judgment. Like all other great enterprises, it has had its day of small business; and it is surprising to think how recent that day was.

There has, however, always been dairy products since civilization commenced; but dairying was not made a speciality until within the last half century, and even twenty or thirty years ago it was comparatively nothing; and now the value of butter in a single season is estimated at two hundred millions of dollars.

The manufacture of good butter is really an important matter for the public, as well as for the farmer. We are all interested in the quality of the butter placed upon our tables, and farmers should be interested in the quality of the butter that they send to market, for they

well know that the best always commands the highest price and the readiest sale. When butter making is well conducted, it is one of the most profitable branches of farm industry in the Northern States, and it will continue to be profitable. It should especially commend itself to agriculturists where there is good sweet pasturage in abundance, and pure water, as there is an increasing demand for good butter the world over, and it is deemed almost a necessity. Good, aroma, coarse grained, yellow butter is certainly a luxury, and the supply is insufficient for the demand; therefore, we should try and make such butter as will meet the requirements of the market both in quality and quantity. A manufacturer of wares may make goods of first and second qualities, and from the latter he may realize the largest profits, but not so with making butter. It does not necessarily cost any more to make a *good* article of butter than it does to make a poor or ordinary article, and the people who make the best butter generally make the most of it from the same number of cows; therefore, they realize much larger profits from their dairies. There is not another product of farm industry of so great value that is liable to so large a per cent. of depreciation as the dairy product. This depreciation may be wholly, or at least in a great measure prevented, by giving more general attention and care to its manufacture, and by procuring more and better conveniences and implements for use in its manufacture, thereby adding many thousands of dollars annually to the profits of our American dairies.

Butter making cannot be classed as a science, but rather an art, which must be learned mostly by experience. There is a sort of skill about it that cannot be detected by lookers on, nor hardly explained by the

maker, but must be acquired by practice and perseverance. Theory is good in its place, but in butter making it must be wedded with practice. Positive rules may be laid down for each and every operation in its manufacture, but circumstances are so various, that rules founded upon the highest success in one instance, might not prove to be just right under different circumstances. Mere opinions on a subject of such great importance, and one so anomalus, are comparatively of little value unless founded on facts, and they should have special reference to the objects. Practical men and women of this age, are more interested in what has been wrought out by experience than any conjectures or opinions founded upon loose statements or fictitious evidences.

To make dairying a successful enterprise, many things are to be considered and must be respected. There are a great many little items and points that are very essential, but may seem to some to be of little or no consequence, but really are very important, and should be regarded, as they will help a great deal in a season—some in one way and some in other ways. Milk and cream should be properly cared for, properly churned and in due time; the butter washed, salted and worked in a proper manner, also the proper time. Every practical discriminating butter maker knows that when milk is sour or loppered, that the cream should be taken care of and churned without delay, and when the butter has come, it should be freed of the buttermilk, salted and worked, also secluded from the atmosphere, if it is to be kept. It often happens that only one hour of negligence or delay in taking care of milk or cream, churning or working the butter, will greatly deteriorate the quality of the butter. The least particle of buttermilk left in

butter will very soon sour and decompose, and will cause the whole mass to become stale and rancid; also, if the salt is not uniformly mixed through it, the butter will be streaked; and, if the butter is mixed or worked too much, or, if it is not properly worked, its grain will be broken and salvy; therefore, there is much depending on the manner that it is worked, or the proceeds of the dairy will be greatly depreciated. The best and most noted butter makers say that butter should always be worked with the least friction possible on it, not rubbed over nor slid about, but should be carefully pressed, cut, turned, and thoroughly mixed; an operation requiring much skill to do it properly, and great strength of muscle if done with a hand ladle, also much time. A machine that will wash, salt, and work butter perfectly, in condition for packing, and in much less time than it can be done by hand, also equally as well as may be done any other way, is worth what? Can there be an estimate of its value?

It is generally conceded that the desirable points for a perfect butter worker are: First—Simple devices sufficient to thoroughly wash, or expel every particle of buttermilk from the butter and drain it off, to mingle the salt uniformly through the butter, and to work the whole mass as nearly alike as possible and not injure any of its grain. Second—Simplicity, durability and ease of its operation, the use of which may be within the strength and control of women, ease of cleaning and keeping it clean. Last, though not least, an absence of all gearing or rollers that are liable to get out of order, or to be kept clean, also joints, crevices and corners which are liable to secrete germs of putrification.

We do not claim that the Eureka Butter Worker will

work butter unaided by human hands, nor without labor; but it used with good judgment it will prove a source of profit to the dairyman, and a well-spring of joy in every family that has butter to work; therefore, we would respectfully ask the reader to examine cuts, &c., in this pamplet, and if interested, to further investigate it, by addressing or consulting with any who may be acquainted with the machine, also by addressing

J. P. CORBIN,
Whitney's Point, N Y.

Prerequisites to Butter Making.

There are many prerequisites to successful butter making, of which we will mention in this little manual some of the large or most important ones that are quite essential, and should be regarded. To find the first requisite, it will be necessary to look to the pastures, and secure sweet and nutritious grasses, and pure water in abundance, as milk of the best quality cannot be produced from weeds, sour grass, nor foul water. It is important that there should be a variety of grasses, that will furnish feed through the entire season. Cows are essential, and may with propriety be considered the first requisite. Good and convenient barns, well stocked with sweet, nutritious food for winter, is essential, and a cool, neat and convenient dairy house is a prerequisite, one that will require much forethought and care, also experience in butter making to construct one properly. The buildings need not necessarily be decorated with costly appendages, but should be substantial, neat and

convenient, also should be furnished with the most improved and best utensils and implements for each and every operation in the manufacture of butter—milk strainers, vessels in which to keep the milk preparatory to making butter, skimmers, cream strainers, churns, butter workers, also power to churn with ; all capable of doing the best of work of its kind, resulting with the best success.

There are many little conveniences and items which we will not mention here, although quite essential in assisting to do the dairy work easily and expeditiously, also in keeping neat, sweet and tidy. No one can expect to make prime butter without many of these requisites. A dairyman's library should be well selected, and well read, also the same respecting his papers. He may gain knowledge by reading, but whatever his books and papers may teach, he should glean therefrom, weigh and consider, then fall back upon common sense ; also compare with his own experience, or that of some others known to be skilled in the art and reliable, as the final umpire in every case. Above all, there should be a stock of sound discriminating judgment, with an honest and fixed determination to excel in producing the best of butter, and gain a first-class reputation, and to give the purchaser perfect satisfaction for his money, also to build up a permanent and successful business.

Selection of Cows.

It is quite important to the profits of a dairy, that the cows should be good ones,—those that are best adapted to butter making,—as there is a wide difference in cows, not only in the quantity of milk that they give, but the

richness of it for butter. How are we to judge the quality of cows? The surest way is to milk them and test the milk, as the milk of some cows is better adapted for cheese making or marketing rather than for butter making. A cow may give a large mess of milk, but perhaps it will not make but a small amount of butter; another cow may give but a small mess of milk, but it will make more butter than the large mess; therefore, such cows should be selected that are best adapted for the business they are designed for, regardless of breed or color; then with plenty of good, clean, early cut hay, water and warm, clean quarters, generous feeding and good care in winter: and in summer, provided with sweet pasturage in abundance, and pure water, there is no reason why they will not yield a large supply of rich pure milk. There are many points and marks about cows that are claimed as signs indicating good cows, but how much dependence is to be placed upon them, we are unable to say, but the general appearance of cows should indicate their qualities, which has always been our most reliable sign. The udder should be soft and capacious, not fleshy. The teats should set wide apart, not too large nor too small, giving a large smooth stream. The milk veins should be large and extend well ahead, and the holes large where they pass up into the body. Cows should be of a mild, quiet disposition, gentle and easy to milk, and hearty feeders.

Dairy House.

There are many things to be considered in the construction of a dairy house. It should be located where the atmosphere will always be pure, and where there

may be an abundant supply of unfailing, cool, pure water. There should be rooms in it suitable for the different departments of butter making; a milk room that will keep milk in good condition preparatory for churning; another room in which to churn, also wash, salt and work the butter; another in which to wash the dairy utensils. A dairy house should be furnished with the most improved and best apparatus, both for the ease of doing the work, and improving the quality of butter. There are a variety of implements for the different operations in butter making, and there are various kinds of implements for the same purpose, and all are claimed to be the best; therefore, it requires good judgment with a great deal of consideration to select them, as those only should be used by which the most benefit may be derived. A dairy may be deficient of only one implement, the use of which is needed, or an improper implement used, or even a good one used in an improper manner, and the price or real value of that dairy of butter may be depreciated perhaps five, ten or even twenty per cent. In building a dairy house, every provision should be made for cleanliness, convenience and ease for doing the dairy work, also to increase the quantity of butter, and to improve the quality of it, but in no case should quality be sacrificed for quantity.

It will cost no small sum to properly construct and supply a dairy house with the requisite utensils and implements, but when properly fitted up and furnished it will be found a profitable investment, and it will soon pay the extra expense by the saving of labor, time, care and perplexities, also by the increased quantity of butter and its superior quality over that which can be made with poor or ordinary fixtures; but unless there is skill

and care exercised with judgment, a good article of butter cannot be produced from the best of cows in the best of feed, also with the best and most approved apparatus. In fact every dairy house should be provided with everything that will facilitate its labors, as there is a multiplicity of cares and duties that have to be performed in and about them every day.

Milk Room.

This is a prerequisite of no small importance, and it should be the first, and main thing to be considered in planning and constructing a dairy house. We prefer, and think it advisable, to have the dairy house or dairy rooms, (excepting the butter room,) above ground, and attached to the dwelling, for several reasons; and a northern exposure preferrable. In many localities the ground is such that cellars will be damp, and in most any locality there are times that the atmosphere will be heavy and damp in most all cellars, which will have bad effects on milk and cream. It will save dairy women an unlimited number of steps by being above ground, also by being attached to the dwelling; then the convenience in bad weather by its not being away from the dwelling; besides, if it is situated but a short distance away from the dwelling, there will be danger that the milk, cream or butter may be neglected at times. New milk even contains within itself elements of decay, and when left to itself, it will constantly be undergoing a change towards decomposition and acidity from the time that it is drawn from the cow until it is decomposed, but faster under some circumstances than others. When decomposition has arrived to a certain degree, it will deterorate

very radidly, and unless taken care of, putrifaction will speedily ensue. In some respects, milk is like fruit. When fruit is ripe and in its prime, it should be used; and so with milk and cream, when ripe it should be churned, therefore, it needs close attention and care.

Milk rooms should be constructed with a view to perfect cleanliness, and convenience for doing the dairy work. There should be a sink for emptying the sour milk into, in the milk room or handy by it, with a spout or conductor attached to it to carry the milk off into the swill tub, which should be far enough away so that there will be no stench from it reaching the milk room. When there is sufficient fall to run the milk the desired distance to the hog pen, it will be still more convenient to have the tub in it. Either will save an immense amount of carrying swill in large dairies, and the same proportion in small ones. The sink and spout should be so arranged that it may be handily cleaned, and surely kept sweet near the milk room.

Temperature for Milk Rooms.

The temperature of milk rooms is of vast importance, and requires utmost attention in a changeable climate like ours, where the thermometer varies ten, twenty-five and even forty degrees in twelve hours; therefore, milk rooms should also be constructed with a view to keeping an even temperature in them, from cold weather to warm, and from warm to cold. But few milk rooms are properly arranged for controlling the temperature in them. Dairymen in general are quite apt to think that if they can only get the milk into the milk room, and strained, there is little or no need of making further pro-

visions or care for it, until skimming or churning time. Milk rooms should be constructed (if above ground) with double walls, with about a foot space between them, which will protect it from the effects of sudden changes in the atmosphere outside. Some fill this space with clean dry saw dust, which will make it warmer in winter, and perhaps will be just as cool in warm weather. There should be double doors, with a space between sufficiently large for a person to enter and close one door before opening the other, so as not to let in a rush of warm air. When the outside atmosphere is not too warm both doors need not be used. The windows should be provided in winter with double sash, or glass set on both sides of the sash, to protect it from cold, and in summer with wire cloth screens, such as will keep out cats, mice, flies, &c., also screens that may be shut in place of the doors. There should be shades or blinds to the windows. It is better to keep the milk room darkened only when working in it, then it should be well lighted in every part of it. There should be registers through or near the floor, such as will give full ingress to fresh pure air, and when desired, cool air from an ice room or a cool sweet cellar. There should also be ventilators at the top of the room so that the warm or foul air (if any) may readily escape. The registers and ventilators should be made so that they may be opened and shut at discretion, giving perfect control of the temperature, which should be at sixty to sixty-two degrees, as near as possible; therefore a thermometer is indispensable in the milk room. Cream will rise in a warmer temperature than it will do to churn it. In warm weather, the registers and ventilators should be kept open; thus a change of

air may be made in any weather, even when it is apparently still, and if there is not too much wind, and the outside atmosphere is cool, and too warm in the milk room, the windows and doors should be opened and remain open nights with the screens in but care should be taken that the wind does not blow on the milk. If the temperature outside is too warm, they should be closed and kept shut as much as possible. The ventilators at the top of the room should be kept open most of the time, unless when too cool,in the room and no fire. When the atmosphere is too cold in the milk room, there should be a steady fire kept, and heated as near the bottom of the room as possible, and the registers shut; but the ventilators should be open, as the heated air always raises to the top of the room. It is an advantage to have rays of sunshine enter the milk room occasionally for a short time,when the weather is not too extremely hot; it will help to purify the atmosphere and dry up the moisture that may be in the room, which is unavoidable at times.

Churning Room.

This room should be adjoining the milk room, and so arranged that it may be of proper temperature when the churning is being performed, also so that the operation of churning will not jar or disturb the milk in the milk room. There should be steam, water, or animal power at hand to operate the churn. The churn should stand where it may be conveniently seen from the work room, and it should be looked to often during the process of churning, to see that everything is going on properly,

and that the churn may be stopped immediately when the butter comes.

Slow goes the churn ;
  Its load of clogging cream
At once foregoes its name,
  From knotty particles
First floating wide,
  Then congealing butter
Dashed from side to side.

Working, Packing and Storage Room.

This should be a cool, dry, sweet, neat room, and well lighted, especially where the working of butter is performed. It is preferable to have this room in a cellar, and it should be handy to get into from the churning room. The working room should be furnished with a good and convenient butter worker, one that any dairywoman can use easily ; wash, salt and work hard or soft butter with every manner desired, without injuring the grain of the butter. There should be no complicated gearing or machinery about it to keep clean and liable to get out of order, neither should there be any corners nor crevices in it which are liable to secrete germs of putrifaction. Everything about it should be simple, easy to clean and keep sweet. It should also be light and convenient to ; also strong and durable, nothing about it liable to get out of order.

Cleaning or Washing Room.

Convenience should be strictly regarded about the arrangements of this room ; therefore it should be handy to the milkroom, also to the churning room. There

should be soft water in abundance for cleaning purposes, and handy to get, also conveniences for heating the water, and arranged so that the heat will not effect the milk room nor churning room. It should be provided with wash sinks, also slop drains, that should be kept in such condition that there will be no stench rising from them.

Neatness.

The most exquisite neatness in every department of dairying is essentially a requisite, to say nothing of the vice of forcing unclean food on consumers; and it should be a municipal regulation, while milk and cream are so exceedingly sensitive to the slightest taints of the atmosphere, or anything with which they come in contact, as to absorb unmistakable evidence of them in the flavor of the milk, cream and butter. How is it possible to make clean and sweet flavored butter, from milk or cream that has stood in stale or unclean vessels, or even in sweet vessels standing in a filthy room, reeking with emanations from decomposing slops or the swill tub, or the stench from the hog pen, or the stable, no matter what wonderful skill may be exercised in manufacturing it into butter?

In cleansing all milk vessels and dairy utensils, they should first be rinsed in cold water, then thoroughly washed with hot water and soap, perhaps through several waters, then rinsed in clean water, and afterwards scalded in boiling water, and in hot weather put out of doors and sunned, and in cold cloudy weather they should be wiped dry, or dried by a fire. All slops and spatters of milk in or about the milk room should be treated the same way as soon as discovered.

All milk vessels should be made of tin, which is the only fit material for them to be made of. In no case should wooden vessels be used for milk to stand in, not even painted wooden pails for milking pails. Wood will absorb the whey or water of the milk, and no amount of scalding will entirely remove all of it, and it will soon be stale and contain germs of putrifaction, and will cause new milk, if in contact with it, to rapidly decay

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General Management of Butter Dairies.

There is great diversity of opinion in regard to cooling, keeping and preparing milk for the manufacture of butter, and it has long been a question which of the many methods that are practiced is best, or that result in the most benefits, and the same in regard to churning, washing or not washing butter, also working it. There are various modes practised in each and every operation in the manufacture of butter; and it is a fact, that different persons make butter of good quality by entirely different processes; therefore, no one can claim that his is the only way. To lay down a universal rule and say that butter must be made so and so, and that it must not be made in any other way, appears to us as absurd and ill-judged. We will, however, endeavor to describe some of the modes that are practiced in making butter that we know have proved successful, and will briefly point out some of the essentials, and their advantages, hoping that they will afford valuable assistance to butter makers in general, and make an advance in the art of manufacturing butter.

Feeding and Care of Cows.

We will take this as the first operation in the management of dairying; as it is very essential that milch cows should be furnished at all times with an abundant supply of sweet nutritious food and pure water, also kept in good condition and perfect health.

Cow are living machines,—milk manufacturing machines; and if not provided with good fuel and water, the machinery lags and stops. When milch cows are confined on scanty feed, requiring a considerable portion of their time to get a requisite supply of food, or are obliged to travel long distances for drink, they will secrete much less milk and of a poorer quality than when they can fill themselves quickly with sweet wholesome food, and then lie down in the shade and quietly ruminate their food and manufacture milk from it, as their milk is made from what they eat and will contain properties of it; therefore, cows should have such food as will yield milk of the best qualities for butter making, and that which will produce the most of it. Grass is considered the most natural, cheapest and best, but as to the kinds of grasses that are best we are not fully competent to recommend, but from our observation and experience, can say that butter of excellent quality is ma le from herds grass, white clover and the different kinds of June grasses.

No cow can produce pure and healthy milk without she has pure and healthy food and drink. Whatever may cause an unhealthy condition of a cow, it will be sure to deterorate her milk, and nothing will be more sure to do this than scanty and poor food and drink, rough treatment and exposures. A neglected or thin

feverish cow will not only yield a diminished profit, but she will give feverish milk if any; or if there is anything wrong about her, it will affect her milk, or if she eats anything that has a strong or disagreeable odor, it will surely appear in her milk, cream, and the butter produced from it, as her milk is one source she has of casting off filth from her organism. These facts should at all times be well impressed upon the minds of farmers, but more especially in the spring of the year when cows are liable to be thin and more or less feverish. Many farmers keep their cows confined in stanchions too great a portion of the time through the long winter, and, too, in small ill-ventilated stables where they cannot always get fresh pure air, neither can they have proper exercise, and water at all times when desired and needed by them.

Some allow their cows to lie out of doors, exposed to the winter storms and piercing winds, with scarcely a shed for them to get under, which certainly cannot be good economy, for by such exposures, they will require much more food, and they will not be in as good condition in the spring. It will require a great portion of the summer, and good feed for them, to make up this lost condition, and, too, in the best butter making season; neither will they yield as much milk,nor as rich milk as they would if they had had good care through the winter and were in good condition. In winter, and especially in the spring, cows need special attention and care. They should have clean, warm, spacious stables, well ventilated, and a variety of wholesome food in abundance, especially well cured, early cut, fine hay, also good water; and in summer they should be provided with good pasturage in abundance, with plentiful supplies of run-

ning water, and shade trees or sheds to protect them from the intense rays of the sun. There should be sowed corn or other green herbage on hand for fall feeding, especially in a dry autumn, and later as frosty weather approaches.

Lucern was highly recommended by the Hon. Harris Lewis, of Herkimer Co., N. Y., in an address delivered at the convention of the American Dairymen's Association, at Utica, Jan., 1871, as being the best of all forage plants for soiling milch cows. His second choice was orchard grass; and his third, common meadow grass; and corn he regarded as worthless, its cost in most cases exceeding its actual value. A resolution was, however, passed by the convention, that corn was a valuable crop, and recommended it as a forage crop.

Cows should have salt frequently, and regularly, at least twice a week in summer. A very good way is to have a tight box or trough placed where it will be protected from storms, and a quantity of salt kept in it all the time, and let the cows go to it every day and lick as they like. Cows should never be dogged to or from the pasture, and care should be taken not to over drive them, but allow them to travel in their natural gait, especially when their bags are full, or in hot weather. Fast driving will not only lessen the quantity of milk, but, will injure the quality of that which they will give. There is about twenty-five per cent. difference in the quality of the milk delivered at factories, from good dairies and that from poor dairies, as is stated by many factory men.

Milking.

The milking should always be performed gently,

quietly and rapidly, also at regular hours, morning and evening, every day, without change of milkers. Some cows will hold up their milk if they are not milked by the same milker that they are usually milked by, or if there is anything exciting to them during the milking, like loud talking, or laughing, or if a stranger comes near them. There is a flow of milk into their udders soon after the milking is commenced, and if checked, it will be difficult to regain it; therefore, after a cow is commenced to be milked, she should be finished without delay or stopping, as many do, to go and empty their pails and for other purposes. There should be pail room enough before commencing to milk a cow to hold her milk, and then steadily milked until she is milked clean. If cows are not milked at about the accustomed time that they usually are milked, this flow will take place before the milking is commenced, especially in time of flush feed; and some cows will leak their milk if they are not milked very soon after this flow commences, hence, there will be a loss of milk. Great care, too, should always be taken to milk cows clean, as a little milk left in the udder will gradually dry a cow up, besides the last milk drawn is at least ten times richer in butter than the first that is drawn.

Cleanliness in milking should be strictly observed. Too many dairymen and dairy-women allow themselves to get careless in this matter of cleanliness. Generally speaking, they remember only this fact, that dairying makes clean money. All dirt and loose hairs should be brushed from the udder and sides of the cow before commencing to milk. If the dirt does not readily brush off from the teats and udder, they should be washed in water and wiped dry before milking; besides making them

clean, there is nothing better to allay inflammation or garget in its first stages in a cow's bag, than washing, and rubbing in cold water.

Composition of Milk and Cream.

The milk of cows, according to chemical analysis, varies in its composition, not only from different cows, but from the same cow at different times, and in different seasons of the year. In the latter part of the season milk contains more butter than the same quantity of milk produced in the early part of summer, also the strippings, or the milk last drawn from the cow's udder is much richer than that drawn first. Milk is greatly modified by the quality and flavor of the food which the cow eats, and the atmosphere that she is exposed to,also her health and exercise too will have a great influence on her milk. Notwithstanding all these variations, an average percentage can be arrived at, and has been found by numerous analyses, that 100 parts of new milk contains 87.5 parts of water, 4.5 of milk sugar, 4. of fatty matters, 3.25 of albuminoids (casein and albumen) 0.75 of mineral matters. The various substances comprised in milk may be classified under four heads—cream, butter, caseine or curd, water or whey. Cream, is composed of 59.25 parts of water, 35. of fat, 3.05 of milk sugar, 2.20 of albuminoids, .50 of mineral matters. The fat is encased in a caseine membrane, and consists of small egg-shaped globules, and when of proper age they being lighter than the fluid containing them, they rise to the surface.

Cream when properly and sufficiently churned under-

goes a complete change; the caseine cells are broken, and the fatty globules gradually adhear one to the other and form a solid fatty mass called butter. As butter is very liable to become rancid, it is necessary to adopt means to prevent it, which will be described in the following pages. The rancidity of butter is due to a fermentation generated by the caseine existing in it, which unfolds the fatty matters to their respective acids, which have a most disagreeable taste and odor, and imparts to butter a rank taste. As caseine will destroy the keeping qualities of butter, and it being the chief componant of butter milk excepting water, I will add its composition, which according to Dr. Voelcker's analysis is 53.57 parts carbon, 22.03 oxygen, 15.41 Nitrogen, 7.14 Hydrogen 1.11 Sulphur, 0.74 Phosphorus.

Bad or Impure Milk.

It sometimes happens from various causes that milk will be bad; and it is just as impossible to make good butter or good cheese from bad or impure milk, as it is to make good flour from bad grain, or good bread from bad flour. At the Convention of the American Dairymen's Association held at Utica, N. Y., in Jan., 1871. there was much said about bad milk, tainted milk, unclean milk, its causes, effects and preventatives. There were many, and some quite lengthy discussions on the subject and all were agreed that it greatly depreciated milk for the making of good butter or good cheese, and that it was impossible to make as much of it from the same quantity of such milk, even if but slightly tainted, as from that which is pure and all right.

If the causes are removed that will be a preventative

of course. It was ably discussed at the convention and decided that the causes of bad milk were wholly in the health, and treatment of cows, their food and water, also not properly cooling the milk, and the uncleaness of it, and the impurity of the vessals and the atmosphere. There is no luxury that comes to the table that is so exquisietly sensitive to the slightest taint of anything with which it comes in contact, or any odor that may be in the atmosphere, as milk, cream and butter, therefore cleanliness and watchfulness in every department of dairying is of vast importance.

Sometimes one thing, and sometimes another will cause impure milk, therefore all departments need close attention of dairymen and dairywomen.

Cooling and Keeping Milk.

For making butter, milk should be cooled soon after being drawn from the cow, at least the animal heat removed from it before being set to cream, also the milk of all the cows in the dairy should be mixed together. It will make it uniform in quality, and temperature, and the whole milking will be ready to skim or churn at the same time, besides it will prolong its sweetness and keeping qualities which has been proved in various ways. There is a wide difference in the keeping qualities of milk from different cows. Some cows, milk will sour and even loppar while that of some other cows will be sweet standing in the same room. The oldest and most common way of keeping milk for butter making, is to strain it direct from the milking pail into eight

quart pans, filling them about two thirds full, and seting them on shelves or racks, and leting them stand until the milk is sour, and generally until it is lopper, which sometimes will be in 24 hours and at other times it will stake 3 or 4 days perhaps: then it will be skimmed, an when enough cream is obtained for a churning it will be churned, but there are improvements over this mode.

Churning the entire Milk.

This is practiced to some extent in some localities, but not as much as it was a few years ago. The milk is set usually in common twelve quart tin pails; but some use the common pans, filling them as full as convenient to handle.

The milk is kept until it is sour just the same as for skimming, but instead of skimming it, the cream and milk is all turned into the churn together and churned.

Where they have not the facilities for churning so much, they will keep back part of the milk—a little of the bottom of each dish. The labor of churning so large a mass is indeed greater, but when this operation is performed by steam, water or animal power, this is of no consequence; and the churning is done by power in most all dairies at the present time; but, on the other hand, it supercedes the labor of skimming the milk and washing the pans, which are many more than is required when the milk is churned, besides cream dishes and other articles, which is no small item in the labors of the dairywoman. There will be equally as much butter obtained any time from the same quantity of milk by churning the entire milk, as there will be to churn the cream only, and sometimes there will be

more, especially in hot, sultry weather,—there certainly will be less wastage of cream sticking to so many pans, cream dishes and skimmers; and it is as certainly true that on the whole the butter is of better quality than that generally produced by the same grade of butter makers that set their milk in small pans, skim and churn the cream only.

The aroma of the butter is more delicate, the grain much coarser, and it sells for a higher price in the market, and it is said, too, that it will keep longer without change. As milk is more or less liable to be tainted with foul odors, both from the cow and the atmosphere, and cream has the greater affinity to absorb, or attract these odors, which it will with remarkable avidity if exposed; and the cream being on the top of the milk, it is more exposed to the foreign odors that may be floating in the atmosphere; therefore it will get more than its proportion of the impurities; and to skim the milk, they are taken off with the cream, then, to churn the cream only, the butter will get the greater proportion of these odors and impurities that the milk and cream may happen to be charged with. By churning all of the sour milk with the cream, it will take back its proportion of these odors and taints; besides, sour milk has cleansing properties; and there being a much greater proportion of milk to the quantity of cream in the churn, the butter will be relieved in the same ratio.

There are other advantages, too, in churning the milk with the cream; there being a less amount of butter in the churn in proportion to the quantity of buttermilk, the butter will give way to the action of the dash with less resistance; therefore the friction on the butter will be much less than if there was a small amount of

buttermilk with a large quantity of butter in it that the dash would have to pass through in churning; hence it will be less liable to make the butter salvy in the operation of gathering it; and, too, it will come with a much coarser grain, which is a great advance towards prime butter. No butter can be prime that has a salvy, fine grain, although its flavor may be sweet when the butter is new, but it will not keep like butter that has a perfect grain and is prime.

Large Pan System.

Many people are now using the patented Large pans with very good success. These pans are made about three feet wide and from six to twelve long, according to the size of the dairy, requiring but one pan for a milking, and but four for a dairy. They are set in a vat which stands on legs, or benches, and are so arranged that where there is a supply of running water, it may be run into one end of the vat, and flow under and around the pan and pass off; and they are also arranged so that ice may be put in the end where the water is let in and the milk brought to any desired temperature and kept there. It is not necessary, however, to have running water. It may be pumped or dipped into the vat, and when it is full, the water may be dipped back on the ice, and re-dipped until the milk is brought to the required temperature. These pans are just as applicable for hot water to warm the milk in cold weather.

They also save a great amount of lifting and washing, besides a mess of milk can be skimmed much quicker than when in small pans, and the cream, too, is all of the same quality and temperature. After the cream is taken off, the milk is drawn out through the

bottom of the pan, and it may be run off in a spout or carried out in pails.

A pan for a large dairy can be cleaned as readily as a dozen ordinary pans; therefore there is a saving of time and much labor by this mode, besides a more uniformity in the quality of butter. They have not been in use only a few years, but they have gained great favor where introduced.

Creamery or Factory System.

This too is a new system of making butter. It was started in Orange County, N. Y., but a few years ago as a factory system of making butter, and proved very successful and profitable, and is being adopted quite extensively in different sections of the country. The milk of a large number of cows is delivered to them by patrons the same manner as it is to cheese factories. The creameries are provided with pools or tanks about two feet deep, with a stream of cold water running into them, and are so arranged that the water will run over when the pool is full. Some are built of stone or brick, and below the surface of the ground; some are built of plank and above the ground; if above, it will require colder water from the fountain than if sunk in the ground. They are also provided with a large number of tin coolers—two for every cow from which milk is delivered. They are eight inches in diameter and twenty inches deep, with bails to them like pails. The new milk is put into these coolers as it comes into the factory. They are filled within two inches of the top, then they are set down into the water the depth of the milk, upon a grate six inches above the bottom of the pool. The water will circulate under and around the cooler, cooling the milk very quickly, on the

top as well as to the bottom, and will keep it at the uniform temperature of the water, which should not be above 58 degrees Farenheit.

Good pure milk treated in this way will keep sweet a long time, even in the hottest of weather, and it will throw up its cream pure,and it may all be obtained. There are various ways practiced of conducting these creameries. At some they take the cream off the milk sweet, and churn it while sweet, and put the sweet buttermilk back with the skim milk and make cheese of it. At some others they take the cream off sweet and then let it stand until it sours, then churn it, and feed the buttermilk to calves or swine, and make the skim milk into cheese while sweet.

At others, they let the milk sour before skimming it; then take off the cream and churn it and feed the buttermilk and skim milk. The butter of well managed creameries will be uniform through the season, like a good brand of flour or sugar, and generally sells in market for three to five cts. per pound higher than choice dairy butter. It is claimed too, that they will make at a well managed creamery, equally as much butter from the same quantity of milk as the most successful dairymen do, besides the cheese that many of them make, which generally sells for about two-thirds the price of new milk cheese, and they make about two pounds of cheese to each pound of butter. The advantages then of making butter at factories are obvious at a glance. By the employment of a skillful superintendent in a well arranged creamery, a more uniform quality of butter may be obtained than by private dairies, and at less cost, and higher prices will be realized from the product of the milk, besides dairymen's families will be relieved of a great

amount of drudgery. Regardless of the mode by which the cream may have been obtained; it should in each and every case be churned in its due time, that is when it is of proper age and condition, and the churning should be performed with care and caution.

There is a great deal depending on the churn,—the construction, shape and arrangements of it; also its operation. If there is too much agitation in the churn, or friction on the butter or cream,—the dasher rubbing it against the sides of the churn, or a shaft revolving in it, &c., it will grind, or crush more or less of the little globules, making the butter come fine grained, salvy and greasy, and no after treatment can restore it; also fast churning will make butter come soft and of an oily consistency, and it will be of light color; also over-churning will injure it

Sour Cream.

More butter and a better quality of butter may be made from milk or cream that is slightly sour, or that which has acquired proper age and condition, than from milk or cream churned when perfectly sweet. It should not, however, be allowed to get too sour, nor stand too long. As the analysis before quoted, shows, that butter is mostly an oil, the fatty portion of milk, and cream is a peculiar mixture of this fat with certain fluids found in the milk, and these buttery particles exist in minute globules encased in a delicate membrane covering, and when of sufficient age, or when the milk or cream gets very sour, these globules decompose or burst and commingle with the fluids, converting itself into whey, and will very soon contaminate the entire mess of cream.

Butter made from such cream, or cream that is partially decomposed, though churned, and the butter worked under other circumstances the most favorable, will be stale, and it will be impossible to keep it long in a wholesome condition; and it may be a query whether it ever was fit for food. The real decay of milk is not indicated by its thickening, as it sours, but by its watery effusions following the thickening. The cream may remain on the milk until this thickening process is complete without detriment to the butter if the milk is kept at the proper temperature; but when the thickening reaches the cream, (as milk commences to lopper at the bottom) it should be removed or churned very soon, or it will commence to whey; and cream should not be kept too long after being removed from the milk, for the same reason. When the temperature is too cold, the cream is liable to grow bitter if kept long.

White Caps or Dry Cream.

Sometimes when the butter is removed from the buttermilk, there will be more or less little white flakes or chunks in the butter about the size of pin-heads to the size of half peas, and the top of the buttermilk will be covered with them also. It is very difficult to get them out of the butter, if not impossible to get them all out; and if any are left in it, they very soon grow rancid, and will contaminate the butter.

They are generally called white caps, and are thought by many to be curdled milk, but they are solid cream. Frequently we have made several pounds of butter from cream saved by straining the butter-milk of a single churning;—hence they will cause loss, besides injuring the butter. They are caused by the milk standing

in a current of air or where the wind strikes directly on to it,—an easterly wind is the worst.

There is no trouble with them in the creamery system, and we have never heard of there being any in the large pans; and there are some milk-rooms where they never make an appearance. By close observation, they may be seen in the cream before it is removed from the milk, or is broken up. It is very difficult to make butter of them simply by churning; but by straining the cream or by forcing it through a cream pump, the difficulty may be obviated, but it is much better to prevent their forming in the cream, which a little precaution will do.

Cream Pumps and Cream Strainers.

There are cream pumps, made of tin with fine wire cloth over the bottom of them. They will force the cream through this fine cloth cutting it fine, so that if there should happen to be any dry cream or chunks it will all be reduced, also it equalizes the cream, and it will not require as much churning to bring the butter, and it will cause it all to come at about the same time. There are also cream strainers for the same purpose. They are made like a tin pail, but have perforated tin bottoms, or wire cloth bottoms. There is an upright shaft standing in the center, with an arm on the lower end and a crank on the upper end, and by revolving it the cream is forced through the bottom, with the same result as with the pump, also another kind, which forces the cream out through perforated tin, the reverse of the cream pump. It will be an advantage to any milk or cream to strain it. Rubbing it through a fine wire meal seive, will have the same effect, but it is rather a slow process, but it will pay if there is no more convenient way.

Temperature for Churning.

The temperature of cream or milk for churning is of vast importance, both for the production of good butter and the time required to bring it. The operation of churning generally raises the temperature of the cream 3 to 5 degrees, therefore it is better to have it at a low temperature when the churning is commenced, especially in warm weather when the temperature outside is high; on the other hand, when the outside temperature is low, then it will do to have the temperature of the cream higher at the commencement of churning. 58 degrees to 64 degrees is about the right temperature for churning under all circumstances. If it is below 58 the buttery particles will not readily break and form into butter, and if above 64 the butter will not gather, besides the grain, flavor and color of it will be materially injured.

When the butter begins to come the temperature should be reduced, and after it is gathered it should be brought down to 58 or lower which may be done by adding cold water.

The most convenient way to temper cream in a churn is to have a tin tube 6 or 8 inches in diameter and about 2 feet long with a bottom to it, and a handle soldered on the top, they are similar to the creamery coolers except the handle should be solid and high. If the cream is too warm, the cooler or tube may be filled with cold water, and if necessary ice may be put into it, and the cooler put down into the cream or milk and stirred around through it until the cream is bronght down to the proper temperature. If the cream is too cold, warm water should be used in the same manner, until the temperature is brought up In eather case it will be found to be

much better than to put cold or warm water into the cream, or to have it stand near the fire to warm

Churns.

There being many hundred kinds of churns, it is very difficult for some to decide which kind is the best, or even which they prefer. We have examined the models of them in the Patent Office at Washington, also have seen the operation and results of very many of the churns, and do not hesitate to say that we believe the venerable up and down dasher churn to be the best kind, or that better butter can be, and is made with it in hundreds of dairies, than with any other churn yet invented. We have worked butter made by many different kinds of churns and must say that we have never found as coarse grained, firm butter as that which was produced by the venerable old up and down dasher. The only objection that is made, or that can possibly be sustained against the up and down dasher churn is, that it is hard to operate, but the gain in the quality of butter more than pays the difference of labor, besides there should always be some kind of power for operating the churn in every dairy of any size, (see adv. in back part of this book,) then of course the little extra power that may be required is not of much account. There are several times as many of the up and down dasher churns in use than of all the other kinds put together, and they are used too by the best butter makers. We do not wish to say a word of disparagement against any kind of churn, nor discourage any one from studying for the improvement of churns. From our own experience and observation, and what we have learned from the experience of others, we are fully convinced that revolving dashers or rotary churns of any

kind, will create more friction on the butter, and make it more salvy and greasy, than the up and down dasher, as thousands of good butter makers will assert ; also that there is too much agitation in most of them, causing the butter to come soft, unless when very cold. The motion of a revolving churn, also of a revolving dasher, will throw the butter to the sides of the churn, and there will be continually rubbed against it during the operation ; thereby it will be injured, besides more or less will be ground or wore out by the shaft. The shape and construction of dash churns will effect the quality of butter, also the time of bringing it.

Churns should be made of white oak, barrel shaped with the bulge about one-third the distance from the bottom to the top, and a curb made of staves, nicely and firmly spliced on to the top of the churn. The curb should be from four to six inches high and made flaring at the top, so that the lid will go in readily and fit snug on the top of the churn. The lid will be more convenient to remove, if made in two pieces, especially when the churning is performed by power ; if in two pieces it may be removed without slipping it over the dasher-staff, therefore it will be unneccessary to detach it from the power. There should be a knob in each piece of the lid to handle it by, and there should be a half-inch hole down through them into the churn to give the cream air when churning.

There should be a guide fixed above the churn for the staff to pass through, to steady it, and keep it from grinding and rubbing the cream against the lid where the staff passes through it. The dasher should be made of two pieces of hard wood, three to four inches wide, about an inch thick, halved snugly together crosswise

and flat, and should be as long as will go to the bottom of the churn. Each arm of the dash should be cupped out on the under side like an inverted dish, and there should be fine holes up through from these cups.

These cups may be made by boring several holes with a large augur, until the point of it just pricks through. The dash should be smooth, with tight joints, and no notches nor holes through it, except the fine holes from the cups. There should be a thermometer set in the side of the churn, so that the temperature of the cream may be seen at any time. There are thermometers especially adapted to be inserted in the side of barrel-shaped churns, and are much more convenient than the common thermometers. They are encased in a cast-iron socket, which may be set in the side of the churn and be perfectly tight around it, the ball being where the cream will come in contact with it, and the scale on the outside of the churn marked the standard for churning, with degrees above and below, so the temperature of the cream in the churn may be determined at a glance, even when the churn is being operated.

There is a slide over the glass which will protect it from the outside temperature, also from liability of being broken. When the churn is not in use, it may stand in the milk-room, with the slide removed, which will show the temperature of the milk-room.

Churning.

The agitation of the cream when churning, and the duration of it, have great influence on the quality of the butter. In churning, the dash should always go to the bottom of the churn also be raised above the cream. When there are cups to the dash, they will fill with air, and as

the dash goes down through the cream, the pressure will force the air through the fine holes and scatter it through the cream, which will help to rupture and divest the buttery globules of the envelopes that hold them in cream, also to congeal these globules, and bring them in contact with each other; also air will help to give the butter color. Some scientific and some patent churn men argue that air is of no help in bringing butter, but cream may be agitated violently or slowly, from morning until night with any kind of a dasher, rotary, or an up and down dash, and unless the cream is opened from the surface to the agitator, the butter will not properly separate from the cream, which is an established fact demonstrated by buttermakers. The dasher should be operated with a steady, regular motion, 60 to 80 strokes per minute, and when the butter begins to come, the motion should be slackened, and the instant the butter has come, or is all gathered, the agitation should cease, not churn, and mix the butter into a homogeneous mass.

If the churning is performed too fast, the butter will come soft and light color, also liable to be salvy, and surely will be if churned too much. It should not at any time require over an hour to fetch the butter, and it will not when everything is all right; neither should it be brought inside of twenty minutes, and the butter should be solid, with a coarse, firm grain, and of a rich, yellow color; and it will be if the milk and cream has been properly treated, and was produced from good cows properly cared for, also the butter will have a good, sweet flavor.

The next, and a very important work to be done, is to extract the buttermilk from the butter, salt and work it

Washing, Salting and Working Butter.

There is perhaps no other point about buttermaking that is of more interest to butter makers, or that so vitally effects the real quality of butter, as the matter of washing it, and properly working it, upon which depends much of its superiority. This question of washing or not washing butter has been discussed perhaps more than any other connected with buttermaking, and it is not fully settled yet with small or some family butter makers; but in the best buttermaking districts, the butter is universally washed before it is salted; also good butter makers in general wash it, and we believe that washing the butter is indispensable for the complete and perfect removal of all the buttermilk and caseine. The envelopes that hold the buttery globules in cream, being composed of caseine, and churning only breaks them, there will be many of these ruptured skins mingled with the butter when it comes from the churn; also there will be more or less buttermilk in with it, which cannot be all drained off.

According to analysis, caseine and milk-sugar are the chief components of buttermilk, excepting water, and caseine being very liable to putrifaction, the butter should be relieved of it as soon as possible; and now, how can we most thoroughly do this, and with the least injury to the grain of the butter? Not by working the butter in a dry condition, mixing with it these skins, also particles of curd which are in the buttermilk. It has always been our practice, as soon as the butter comes, to put it direct from the churn into cold water, and mix it through the water, and work the butter together carefully in the water with the lever ladle, then drain it off, and put more on again, and continue so to do

until the water will not be colored by milk. In general, rinsing it through three waters will be sufficient, unless the butter happens to be soft, when it should not be worked nor mixed much until it is cooled; in that case, the water should be changed oftener, in order that it may be kept cold and harden up the butter, but it is not advisable, however, to put ice onto it, nor to put it into ice cold water, for it will chill it, also liable to whiten the butter. The water will separate these caseine skins from the butter; also will commingle with the buttermilk and rinse the sourness from the butter. A little salt put into the last water will be of great advantage; it helps to extract the milk, also toughen the grain of the butter. It is argued by some, and perhaps with some degree of reason, that washing butter is liable to remove some of the delicate flavors that new butter is entitled to, and granting, too, that unwashed butter, when new, has a more delicious flavor than washed butter; but if unwashed butter will soon begin to lose flavor, or gain bad flavors, even by keeping but a short time, which it certainly will, and deteriorate on account of the caseineous matters that may be in it, then why not wash it, and prevent this deterioration? Also some claim that water will spoil or injure butter by being put into it, but this, too, is a mistaken idea.

Pure water of proper temperature will not injure butter by its remaining in it a reasonable length of time, neither will it penetrate the butter, nor extract any of its keeping qualities. By washing the milk from the butter, the grain of it is not near as liable to get injured as it is when the butter is worked to get it out, and we very much doubt whether butter can be cleansed of all the buttermilk and caseine without being washed or

rinsed. After the milk is all out of the butter, or all that will come out when fresh by rinsing it without too much mixing and working, it should then be salted and mixed a very little and set in a cool place for the salt to dissolve.

The salt should be fine and as pure as possible, without the least odor, and will completely dissolve in cold water to a perfectly clear liquid without a particle of sediment or skum and be of pure salt taste. No other ingredient is required for the preservation of butter, and no other should be employed, such as saltpeter or sugar, for they will destroy or overpower the fine delicate flavors, that butter should have; and prime butter, will have it. Also too much salt in butter will have a similar effect. About one ounce of salt to a pound of butter is about the right proportion for long keeping, or the general market, otherwise salt to suit the taste or the market that it is designed for. Salt has three distinct offices to serve in butter.—1st, to flavor it; 2d, to loosen and expel the caseine and buttermilk from the butter; 3d, to preserve from rancidity and decomposition that which does not get removed from the butter. It also will attract the water from butter which will dissolve the salt, and the brine will penetrate more or less into the pores of the butter and take up the milk sugar which is liable to fomentation and rancidity, also it will toughen the grain of the butter.

Butter properly made from good milk and perfectly freed of buttermilk and caseine, may be preserved without salt. In some countries the butter is used without being salted a particle, and there are some people in this country that will not use salted butter. In the whole operation of washing and salting butter we do

not mix nor work it but very little, for when butter is first churned or is fresh, the grain of it is very tender, and if the salt is very thoroughly mixed through it at this time, it will tear and grind many of the globules of butter, making it salvy. After the butter has been salted one or two hours, it should be turned and mixed a little exposing other portions of it to the actions of the atmosphere, which with the salt will give the butter a rich color. On no account should it be allowed to stand very long before being worked for the fresh and unexposed spots will grow white or remain light color, and the salted and exposed parts grow yellow, therefore it will be liable to require much so as to necessitate overworking per[illegible] to make it uniform in color. As the brine [illegible] of the butter it will expel the buttermilk [illegible] yet to be in it, which should be drained off and the butter allowed to stand several hours, when it should be turned and worked a little more, and drained again, as it should always be at the close of every working; then it may stand until the next morning, when it should be worked until it is uniform both in color and flavor, and the brine that works out will be perfectly clear. Butter should always be worked in a liquid, in water, before salting, and afterwards in brine. It will be a protection to the grain of the butter, also it will help to extract the buttermilk from the butter, therefore it will not require as much working to cleanse it of the butter-milk, and at the same time it will bear much more working without injuring the grain of the butter. It should not, however be worked a particle more than is actually necessary to extract all of the butter-milk, and commingle the salt uniformily through the butter

As we have butter-workers to sell, perhaps it might be to our advantage if butter-makers were oblige to work their butter more, nevertheless we advocate that the less butter is worked and mixed the better it will be. There are two essentials however, the thorough removal of every particle of milk and casein from the butter, and uniformly commingling the salt with the butter. Working butter always makes it softer and more oily, and it is very liable to make it more or less salvy, especially when it is not properly worked, or if worked when it is soft or first churned or is fresh, and if it is overworked it certainly will be salvy. There is more butter spoiled or injured by being over-worked or by not being properly worked than there is by not being worked enough. Over-worked and over-churned butter will be salvy and sticky; it will have a lardy appearance when soft, and a tallowy appearance when it is hard; and it will very soon taste old and become rancid.

Butter should never be worked by any persons' hands nor allowed to come in contact with them, although they may be perfectly clean and as neat as a shaker woman's, or if scalded and put into ice cold water, and even the butter be worked in cold water, there will be an insensible warmth from them that will soften and injure the butter. Friction on butter in any manner or at any time will more or less injure the grain of it, and when injured or made salvy no after treatment can restore it, therefore it should at all times be worked and handled with the greatest care and caution. It should never be rubbed over nor slid about, neither should it be mashed closely between two hard substances; but should be cut and turned carefully, and worked at all times discriminately, which may all be done with the Eureka Butter Worker,

and done easily and speedily and too without injuring the butter. (See 4th and 5th pages.)

Packages and Preparing Them.

Butter should be packed in such packages as it will keep best in, also such as it will sell best in. In the New York market it sells best in firkins and half firkin tubs, which are quoted state; and in returnable tubs quoted Orange County pails. Many of the firkins and firkin tubs are quoted as Orange County. Orange County N. Y., has a world-wide reputation for producing fine butter; or rather Orange County and Goshen butter has great celebrity for its superiority both in home and foreign markets.

Orange County, N. Y., undoubtedly does produce some very fine butter; but the greater bulk of butter that is marked and sold as Orange County or Goshen butter is not made in Goshen nor in Orange County, and there is much of it that is not made in the State of N. Y. even. We venture to say that there is more butter sent to the New York markets every year from every county in the southern part of the State of New York, west of Orange County, marked Orange or Goshen, and sold as Orange County butter, than there is made in the County of Orange. Almost every wholesale butter dealer in New York have Orange County butter to sell, also the retail dealers there; and in the adjoining cities, and in many of the eastern cities, have cards marked Goshen, &c., sticking in samples of butter; and undoubtedly they do have some Orange County butter. We saw in New York a butter dealer marking several hundred firkins of butter for shipment to Europe, and every firkin was marked choice Goshen butter, put up expressly for family use, by (the

dealers name.) The dairymen's name was planed off, and we presume not a package of it was made in Orange County. We know several dairies of it, and knew that it was made far west of Orange County. It is the best of butter, and that which is put up in suitable packages, that is remarked or sold as Orange County butter; therefore it is no discredit to the reputation of Orange County butter. Butter should always be packed in firkins when designed for foreign markets, or for long keeping. The packages should be made of seasoned white oak, and made perfectly tight, smooth and neat inside and out. Firkins are made like kegs, and should hold eighty-five to one hundred pounds of butter, and should be hooped with hickory half round hoops with the bark on; the tubs are firkins sawed in two with board covers to be nailed on after they are filled.

The return tubs are made larger at the top than the bottom, and taller than the half firkin tubs and are hooped with iron hoops painted black and the tubs blue or varnished on the wood. The covers are fastened on with bolts or keys so that they may be handily removed. Butter is sent to market in these tubs, several hundred miles, and the tubs returned and filled many times, and the same tub used for years. They usually hold fifty to seventy pounds of butter. Each package of any kind should have the dairyman's name branded on it, and the number of it, commencing the season with No. 1, also the weight of it, when dry, should be branded on it. After the package is branded there should be boiling water poured into it, and covered tight and left to steam until the water is cold or nearly so, then emptied, rinsed and filled with strong hot brine and soaked several days, then rinsed again until there will be no color to the water, and

while wet the inside should be rubbed with fine salt, when it will be ready to receive butter. Care should be taken never to wet the outside of firkins.

Ash, spruce and even hemlock tubs of different forms, are used in some sections of the country for packing butter in, and are sent to New York and Boston; also have seen them in the Western States. Butter never sells in such packages in the general market as high as it does in good packages of white oak. (See Silsby Brothers' advertisement in back part of the book.)

Packing and Keeping Butter.

In packing butter, it should be pressed firmly and closely into the package, leaving no space nor crevices in the butter, but should be a solid mass; but at the same time it should be so that it will freely cleave apart when removed from the package, so that it may be cut out in good shape for the table; and if it is of proper consistency when put down, the different packings may be separated. Butter never should be pounded into the package, for every blow struck severely on to it will break many of the globules. The operation of packing butter has the same effect on it that so much working does, and when butter has been sufficiently worked, great care should be taken not to work nor mix it unnecessarily. If the butter is for market, the package should be filled with butter within about an inch of full, and should be leveled off smooth, but should not be rubbed or slicked over, for it will make it look greasy, and be more or less salvy. The color and flavor of it should be uniform from the top of the package to the bottom, so that when a tryer full of butter may be drawn out, it will not show where the different packings come to-

gether, and crystal, clear brine will sparkle all through the butter, where grains of salt have dissolved, and the butter should cleave from the tryer without greasing it. If the butter is to be kept, the package should be set in a cool, dry, sweet cellar, and there should be a clean, white cloth larger than the top of the package wet with brine, and spread over the butter, and about half an inch of pure salt spread over the cloth, and the edge of the cloth outside of the package turned in on the salt, and pressed closely all around the side of the package. The salt should be kept covered with brine, or at least kept completely saturated with it; thus the butter will be perfectly secluded from the atmosphere. The packages should be set level, so the brine will stand all over the butter, and not be full on one side of the package, so that the brine will ooze over and wet the outside of the package. Two scantlings laid down a few inches apart makes a very good rack to set firkins and tubs of butter on; the air can circulate under them, keeping the bottoms of them bright and dry, providing they do not leak. A rack or something of the kind is better than to have them stand on stone or a flat surface. Stone will draw dampness, and make the bottom of the packages mould; neither should there be stone put on the top of the packages for covers, as there are times in most all cellars when moisture will gather and drip from stone, especially where there is salt about them, and if the outside of firkins or tubs get wet, they will look old and rusty by standing; also it will make the hoops fly off or slip when they come to be handled. The packages should be covered with short boards or planks large enough to cover the whole top of the package, and the covers or heads that permanently

belong to the packages should be put where they will be kept dry and bright.

We have frequently kept our dairy of butter through the winter in the cellar with hundreds of bushels of apples, potatoes, turnips, onions, cabbages &c., and some of them very near to the packages, and the flavor of the butter never changed a particle during the winter, or at least not enough to be discovered, nor from the time that it became matured; as butter will very soon after it is made; but when butter is being packed or is exposed in any way to the air, there should be nothing about that will be liable to impart the least odor or taint the atmosphere a particle. We have also kept butter over until the second fall when it was just as sweet, and had the same flavor that it had when tryed the first fall. There is not much danger that good butter will take hurt if kept under strong sweet brine: and butter that is properly manufactured and packed will cleave from the package so that it may be completely surrounded with brine and may be kept perfectly sweet and sound for years. In keeping butter a long time it will be necessary however to replenish the brine occasionally, as it will settle away, also will evaporate, and the salt should be stirred up and more added as it dissolves a way; therefore it requires attention to keep butter good, even after it is made all right and properly packed. There is a great deal of butter sent to marked in rolls and fancy prints, and some of it brings very high prices, but it will not bear distant shipments nor long keeping without a great deal of extra trouble, or the prints will get disfigured and the plain rolls will get mussed, and if exposed to the atmosphere, it will get strong and frowy; therefore, in large dairies and long distance from market, it is

better to pack it in firkins or tubs, especially when the weather is warm; then when it is needed for the table, it may be cut out in shape for a plate or print of any design, and will look new and bright, and if manufactured right, it will be all right.

Making Butter in Winter.

The first thing to be considered is the care and feed of cows. A little meal with a few roots or vegetables fed to milch cows every day in winter in addition to all the good hay that they will eat, will greatly add to the flavor and color of the butter, also will increase the yield, and too they should surely have warm and comfortable quarters. Another essential is to keep the milk warm enough rather than to keep it cool. If milk is kept too cold, the cream will not raise readily, and necessarily will have to stand so long that it will be liable to become bitter, and perhaps too before the milk sours, or near all of the cream has raised to the surface; and if the cream gets bitter the butter will be more bitter. If butter is bitter or stale we do not know of any means of making it perfectly sweet: but by woking it in fresh butter-milk or lopperd-milk, then washing it in water, it will extract some of of the bad flavors; also it will greatly improve old stale butter; but much the better way is to prevent the bad flavors. If the milk and cream is kept at 60 degrees Farn. to 64 degrees, there will be no danger of bitterness if it is not kept longer than will be necessary for it to sour or nicely lopper. If the large pans that are previously described are used in a reasonably warm room, the milk may be kept at the proper temperature; but with the common pans, and in such milk-rooms that dairymen commonly have, the temperature of the milk

will get too low during the night even in the fall and early spring.

Scalding the milk as soon as it is obtained and mixed, when the weather is cold, will give the cream a start; which may be done by setting the pans or pails of milk over boiling water and letting it remain until a skin forms on the top of the milk and it wrinkles up, then set it away and keep it as near 60 or 62 degrees as possible, under the existing circumstances, and if the cream does not raise readily then, or if the milk gets too cold again, warm it again in the same manner, but not as warm as before, and handle it carefully so as not to break the cream that has already raised. The large pans are more convenient for warming up the milk and keeping it warm. Milk should not be kept too long, even if it does not become sour within a proper time, neither should the cream be kept too long after it is skimed off before churning it; never more than four or five days, and it is better to churn twice a week even if there is but one cow.

Many do not churn often enough in cold weather, especially when they have but little milk; and many small butter makers do not churn often enough even in warm weather, which is the case in some large dairies. If there should not be cream enough to churn, sour milk may be added; the butter will certainly be of better quality. We usually churn every day in summer, Sundays excepted; Saturdays or Mondays twice, and in cold weather every other or every third day during buttermaking. Butter of good quality can be made any time in winter, but not with quite as delicate flavor as summer made butter from green pasturage; also it can be made of good color in winter. Scalding the milk in

cold weather gives the butter a richer color and a better flavor, and it will come more readily: and we think, as a generality, that more butter may be produced by scalding the milk. The churning should be conducted the same in winter as in summer, only the cream should be a little warmer. The butter will not require as much washing in cold weather, and care should be taken that the butter does not get too hard before it is sufficiently worked; so hard that it will not adhere together, but if it does get too hard before it is properly worked, it should not be set near a fire, where it will be liable to melt or get too sott, but should be set in a moderately warm room, and stirred up occasionally until it will adhere together, although it may be worked with the Eureka Butter Worker when as hard as tallow. If the churning is done in the morning, the working may be completed the same day in winter, and the butter packed or balled up and put into brine. After it is packed or balled, it may be allowed to acquire any degree of hardness. As winter-made butter is not generally kept long, it is better to make it up into prints or balls of about a pound each, ready for the table, or into rolls that may be cut up into balls. These balls and rolls may be put down in strong brine, and kept nearly as well as butter in any shape, but they must be kept under the brine, or the exposed will soon become frowy; also it should be kept where it is cold or the balls will stick together.

Coloring Butter.

As there are many fastidious customers for fancy butter in cities, it may be an advantage sometimes to color butter a trifle, when food of proper kinds and quality cannot be provided for the cows, or the temperature is such

that the butter will be light color. The high price market demands butter of a rich, golden color, and they who desire to obtain the highest prices, also command the best reputation as butter makers, and get the widest range of markets, must be exact as to the uniformity of color of the butter, and as to good color too. There is not the least doubt with us that the best known process of giving to butter the richest of color, is to give the cows an abundant supply of nutritious food and pure water with good care, also judgment and skill in manufacturing the butter, and with good apparatus; but as there are thousands of butter makers that do not possess all of these essentials, it may be advisable for them to use other means of giving their butter the desired color, which is every butter maker's right and privilege, so long as it is necessary to please the eye as well as the taste, if they do it with a harmless substance.

Scalding the milk in cold weather, as is previously described, will improve the color of the butter, and when it is known before the butter comes that it will be of light color, a little yellow coloring matter may be put into the cream, and any degree of shade or color be given to the butter. Juice of yellow carrots put into the cream in a right quantity will give the butter a perfect butter yellow color, that would have been as white as lard if left uncolored. The juice may be obtained by grating orange carrots fine, then a little water or new milk put on to the pulp and put into a cloth and the juice squeezed out. There may be juice enough prepared at a time for two churnings. Put enough of it into the churn to give the present churning the desired color, and the remainder in the cream dish for the next churning; then put cream in according to the juice. Some use an-

natto dissolved and put into the cream the same as carrot juice; but we think it does not give the butter that grass flavor that carrots do, or rather it does not take off the hay flavor. With either coloring it requires practice and judgment to decide just the exact quantity needed to give the butter the right shade every time; also to make the different churnings the same shade, but by judging from the previous churnings, and knowing the condition of the milk and cream, and the strength of the juice, it may be done very accurately, and it is impossible even for the best experts to tell it from butter colored the natural way. Great care should be taken not to get in too much, although either of them are as harmless as new milk as to injuring the quality of the butter, but if it is of too high color, perhaps it may be as objectionable as if it was too light color, and the color will not wash out. Butter that is colored with carrot juice will fade some on the outside by keeping if exposed. We have kept spring-made butter that was made on hay and colored, until fall, and then it went with the dairy, summer and fall made all together.

Fitting the Packages and Butter for Market.

The salt and cloth should be removed from the packages and the brine all drained off. If in firkins it will be necessary to take off the top hoops and loosen the upper bilge hoops before the brine will all drain out. A clean, white, fine cloth, cut just to fit in the top of the package, should be wet with brine and spread smoothly over the top of the butter, and a little fine salt sprinkled over the cloth; then the package should be headed up tight, and the top and bottom head hoops of firkins

should be nailed with three or four short nails; also the top and bottom of the bilge hoops, but not through into the butter.

The hoops on firkin tubs should be nailed the same way, and the covers nailed on with at least eight shingle nails; the return tubs do not require any nailing.

A wet cloth should be spread over the butter in any kind of package and salt spread on it, and the package wiped dry and clean. Every dairyman should weigh his butter before he sends it to market, each package separately, and mark down the No. of the package: also its gross weight, and the weight of it when empty, adding two pounds for soakage on firkins and one on tubs, which is the custom and standard: then if there should be any mistake in weights, it can be traced to the very package: also he should have a tryer and try every package before it is headed up, and mark its quality with its No., for reference, especially if he is going to send it to a distant market; then he will know just what he is sending, if he is posted in the quality of butter; if he is not, it will help him to get posted, which every dairyman should be posted equal to dealers. In cold weather, rolls and pound balls, also fancy prints, may be wrapped up in white fine cloths wet with strong brine and packed carefully in clean sweet boxes, and sent hundreds of miles to market. Some pack them in barrels instead of boxes, but as freight men will roll barrels, the butter will get disfigured worse than if in boxes. Some have returnable cases for transporting ball butter and prints in to market. They are arranged with twenty-five to fifty compartments, each for one ball or print of butter, and will hold the butter firm and steady. Some of the cases are arranged with refrigerators, that butter may be car-

ried in them when the weather is warm. It is much more trouble and expense to ship ball butter even in cold weather than in firkins or tubs; but if the butter is strictly prime in flavor, grain and color, and is put up in good shape and style, it will pay, as there are many fastidious customers in large cities for fancy butter, and will pay exorbitant prices for style.

Marketing Butter.

There may be no question relative to butter, of more vital interest to dairymen in general, than that of marketing their butter; but more particularly the price of it; which partially depends on where they sell it and who to; but more on its quality, and it ought to wholly. This subject of quality of butter is rather a delicate one to discuss, as it is quite natural for us butter makers to fancy our own make quite equal or a little better than our neighbor's, and usually are quite sensitive and feel hurt if a word of disparity is offered in reference to the quality of it.

We have heard thousands of people express various opinions in regard to making butter, and nearly all claim to know how to make good butter, or their wife, mother or sister makes better butter than anybody else, and it sells higher in market than their neighbor's, and somebody always wants it, &c., &c. It is, too generally conceded that most all women of the rural districts, especially of the Northern States, do know how to make good butter, but go into the principal butter markets, and see the vast amount of second, third, and even what is termed grease butter; then compare with this the amount of sweet, aromy, coarse-grained, prime butter that you find, or look at the market quotations, and see the wide difference in

prices of sales made on the same day, in the same market, and by the same salesman.

Now what is the cause for all this difference? It is mostly in the different qualities and styles of butter; and butter makers ought to learn, from the great difference in prices of butter, the value and importance of producing at least an ordinary class of goods. There are butter dealers located in most all butter producing sections who will buy on speculation all the good butter that they can get, paying according to its quality, taking the risk and chances of rise or fall in the city markets; also there are many who will take the butter and sell it, or send it to dealers in cities, then deduct a per centage from what it is sold for as commission for doing the business: and there are commission dealers in large numbers located in the cities who receive and sell butter on commission; usually five per cent. commission is charged by first-class dealers, the consignor paying freights, cartage etc. Many of them are trusty and safe for any to consign their produce or goods to, but many advertise to do strictly a commission business, and issue weekly prices current as such, but at the same time they will buy produce and keep it on sale in competition with produce of the same kind entrusted in their hands, and the consignor hundreds of miles away; and, too, sales are sometimes made, and the returns not made to the consignor until a long time afterwards, and perhaps, too, at reduced prices, especially when there is a decline in the market prices after the sale was made, and some of them sometimes fail to make returns, incurring heavy losses on consignors. And again, a consignment of butter may be made; the commission merchant receiving it, notifies the consignor accordingly, then sells it, as the opportunity may come; part of it for one price, an-

other part for another price, and so on, at different times, and the sales returned in one bill and at one price, and usually is, or the packages of the same kind all at one price, and the consignors not know to whom the sales were made, and not positively the price in all cases.

These are facts, and we have no feeling in the matter whatever further than stating the truth, although we have consigned butter to different parties and different markets, and have no reason to murmur. We have sold our butter in New York and Brooklyn many times, and have seen thousands of pounds of butter sold in other large cities, and know many who have consigned to commission men; therefore we know whereof we write.

We do not wish to detract the interests of commission or middle men, but there is so much artifice practiced by city sharpers, we would encourage a direct communication from producers to consumers, and consumers to producers or that they have a better acquaintance.

Every intelligent country producer should devote a week or even a month, once a year, or at least once in two or three years, and visit the city markets for his produce, however distant they are, and make the acquaintance of consumers and produce dealers, both retail and wholesale, and investigate their uprightness and responsibility, then when he has produce of any kind for market, he can correspond with those known by him to be reliable; also he can investigate the condition and wants in the market; thereby be benefitted. On the other hand, city consumers, and dealers of country produce should visit the rural districts, and learn where reliable goods may be obtained, and see where the butter and cheese is manufactured, as there are some frauds practised by producers.

An observing eye may at a glance detect from general appearances whether neatness is observed.

It will pay both producer and consumer, and each should aim for his future reputation and honor. Every butter maker should study well the tastes and wants of consumers, then look to his best interests and make butter that will establish for him a reputation, and his brand represent an exact standard, his butter being as nearly an even quality as established brands of flour, or sugar, so that consumers and dealers from distant markets may order from them and know just what they may expect to receive. There are many people of wealth in cities who appreciates luxurious butter, and would gladly pay a price that would be highly remunerative to the producers, could they rely on having a constant supply of such butter as suits them.

Conclusion.

In conclusion we will say that in offering this little work to the public upon this very important subject, (butter making,) that we have aimed not to make a suggestion nor advance an idea that we would not practice, neither have we aimed to advance any new ideas or theories, none but what have been proved, although they may be new to many or at least to a part of them, and may be of value to them, especially beginners and the inexperienced. We do not allow ourself to conclude that our experience should be accepted as a standard rule, but allow us to suggest that experience, and experience only should be accepted as forming a rule of action in dairying; and it is hoped that the suggestions here made will be received in the same friendly spirit in which they are offered. It may be thought perhaps by some that we have gone into unnec-

essary detail, but there are many other suggestions in reference to butter making that might and ought to be thrown out, and make progress, but the foregoing seems to be the most important, and in the hope that the thoughts thus presented in this little manual will be of service to some of those whose eyes may fall upon its pages, it is with diffidence sent out on its mission. There are many who know nothing of dairying, and some understand it in one way, others in another; but the great mass of dairymen and dairy-women need to be educated to a higher standard of care of milk, at least in the manufacture of butter; not that there is a lack of knowledge or skill in many cases, but it is so easy a thing to get negligent. A little expenditure of time and labor in attention to the details of butter-making will be greatly rewarded. Furthermore we will say that in order to make butter of an excellent quality, everything connected with its manufacture should move on with regularity, exactness and neatness. Procuring proper conveniences and implements to facilitate its manufacture will make a great advance in the quality and quantity of the butter, also a saving in its cost.

Is it politic for men to buy all labor-savers for their outdoor work, while their wives have to toil away amid the multiplicity of household cares and duties of the dairy-room, working butter with the old-fashioned hand ladle and fatiguing way of lifting, holding and draining the butter bowl?

Men ought to consider more how many steps women are obliged to take to execute the many and fatiguing labors that necessarily have to be performed daily about dairy work; also amid the thousands of duties of housekeeping. The daily duties of dairywomen are of a kind that require great physical strength and power of endu-

rance, also demand watchfulness, with perseverance and prompt and decided action, especially in hot weather; therefore every butter dairy should be supplied with good and practical implements for each and every operation in the manufacture of butter, for the use of them is one source of its profits, also of the health, comfort and happiness of dairywomen. In these days of scarcity of good help and high prices of butter, there is an unlimited demand for *good Butter Workers*, those that women or any person of judgment can use to advantage, by saving time and strength, also by improving the quality of butter, thereby making money by their use, besides saving broken down constitutions. All butter makers experience more or less aches and pains caused by working butter, and they also know the inconvenience of handling and holding a butter bowl firm when working butter, and of draining off the fluids.

Many good butter makers have been obliged to abandon dairying, for the lack of strength to work the butter, and all greatly feel the need of something to alleviate and facilitate this heavy and fatiguing labor. The health and lives of more women have been sacrificed by working butter than by all other duties of the dairy: therefore, a simple, practical Butter Worker has long been desired and much needed in every dairy, as butter makers will affirm. Many inventions for working butter have been offered and tried, but they failed to combine with the old hand-ladle principle of working, which are conceded by the most noted and best butter makers to be the only true principle of working butter; therefore to have a perfect worker, it must be adapted to work exactly on those principles. It had come to be believed with butter-workers, as with the mower, tedder, horse fork and sewing machine, that

a practical one could not be made, but the *Eureka* supplies the great desideratum (the universal want). It is both practical and simple, containing no unnecessary parts, but everything requisite for a machine to remove *all* the milk from butter, and to commingle the salt uniformly through it; also it embodies *all* of the hand-ladle principles of washing, salting and working butter, and it may *all* be done with it, without injuring the grain of the butter, or fatigue to the operator. By it so much is accomplished, with so little labor, and in so short a time that it surprises all who use it. Every dairyman or dairywoman that we have yet heard from, who has tried one of these workers, testifies to its worth and appreciates its merits, and could not be induced to return to the old practice of working their butter with a hand-ladle and clumsy, wrenching mode of holding the bowl on a table or bench, or to the old lever or roller machines of which there are many kinds.

To enable the reader to form in some degree an idea of the construction, shape and prices of the Eureka Butter Worker, and perhaps see some of its many advantages, (which are better appreciated after using) see cuts and description on 4th and 5th pages.

TO DAIRYMEN

And others Interested in Valuable Improvements.

A retrospect of the past few years cannot fail to impress your minds with the progress made in the introduction of improved farm implements, and machinery designed for aiding the farmer in cultivating the soil, and harvesting the crops. Instead of the question being asked, who can afford to buy and use these implements? The query now is: who can do without them? which implies the same in regard to the

EUREKA BUTTER WORKER.

A good Butter Worker is as much needed by butter makers, as either the Mower, Tedder or Horsefork by farmers, and will pay equally as large a per cent. on its cost during the year.

It is perhaps safe to say, that on nine-tenths of our dairy farms, the *WIFE Works HARDER*, and has more to endure, than even the hired help in the kitchen, or dairyroom, or any other person on the premises. This is perhaps from want of reflection on the part of the husband, who ought to have more consideration how many steps she has to take, and how unremitting are her labors.

Hundreds, and thousands of dollars are annually invested for farm machinery, but scarcely anything to facilitate the labors in the Dairy room; although liberality in good dairy implements, is a source of its profits, and also of the health, comfort and happiness of the Dairywoman.

List the dairy-maid is singing
All is glee, all is glee,
From morn til night it's ringing
The Eureka, the Eureka;
It makes us cheerful
All the day, all the day.

DAIRYMEN,

It will pay you to get a BUTTER WORKER:

GET THE BEST!

The one that will remove the milk from butter best.
The one that will mix the salt through butter best.
The one that will leave the grain of butter best.
The one that will do the whole working of butter best.
The one that will work easiest as well as the best.
And the one that can be cleaned, kept sweet and in order best, is the

BEST BUTTER WORKER

EVER MADE.

THE EUREKA

Is perfectly adapted to easily and wholly wash, salt and and work hard or soft butter, exactly on the hand-ladle principle, without the aid of a hand-ladle or touching the butter with the hands; and it does not injure the grain of the butter. They are substantially made of hard wood and in three sizes, accommodating the largest to the smallest of butter bowls.

Irons liable to be strained are maleable; the bowls are of the best selection.

The machines are nicely finished; light to handle; strong and durable, and as easy to clean as any bowl and ladle.

It has been tested and approved by X. A. Willard, who is acknowledged to be the best authority on Dairy matters, for which statement, reference is had to Mr. Willard's pamphlet on Butter Making, recently published in the Journal of the Royal Agricultural Society of England, which describes and illustrates my machine. It received the highest honors at the great Fair of the

AMERICAN INSTITUTE,

last fall; and at the

New York State Fair!

Also at a Fair of one of the best butter making Counties in the State of New York, with practical dairymen for judges; and what is better, it is highly commended by butter makers wherever and whenever exhibited or used. Its simplicity and practicability brings this expression from nearly all who see it, "I wonder the idea was never thought of before."

In order to create a demand for them, I will not resort to the old worn out plan of publishing certificates of recommendation from others, (of which many may be produced,) but will respectfully invite all to investigate it critically and give it a thorough test, as I am willing to let it stand or fall on its own merits, butter makers themselves to be the judges. It is one thing to make a good thing, and another to make a good thing without incumbering it with poor things. Time tries all things.

THE EUREKA,

like all other real good things, is better liked the longer used, which is proved by second orders and many letters received.

Every dairyman should consider,
That many hours of toil,
'Tis woman's lot to bear,
And should grant to her what'ere he canst,
And all her labors share.

He little knows her many trials,
Although to him they may be small,
To her of mammoth size;
Then her wants he should relieve,
And wealth and happiness,
His garners full will crown.

THE EUREKA

Is valuable for farmers, as they can work their butter much easier, cheaper and better.

THE EUREKA is valuable for butter dealers, as they can work over and greatly improve much of the butter that is brought to them.

THE EUREKA is valuable to consumers, for they will get much better butter.

THE EUREKA is valuable to all who deal in them, for they can make money.

The great value of the Eureka Butter Worker will undoubtedly lead unprincipled persons to attempt immitations, or the construction of similar machines, therefore I

CAUTION

the public against all infringements. All of the peculiar features of the Eureka are covered and secured by Letters Patent, recorded in the Patent office at Washington, D. C. The claims are many in number, and they are distinct and separate on the different parts of the machine making the Patent more valuable than most patents; as there is no possibility of any machine coming up any way like it, or that can work strictly on the hand ladle principle with a Lever Ladle, without infringing on some of the claims that are patented, but if any can see any improvements in the working of it, or in its construction, their improvements will be fairly negotiated for. See cuts on 4th and 5th pages.

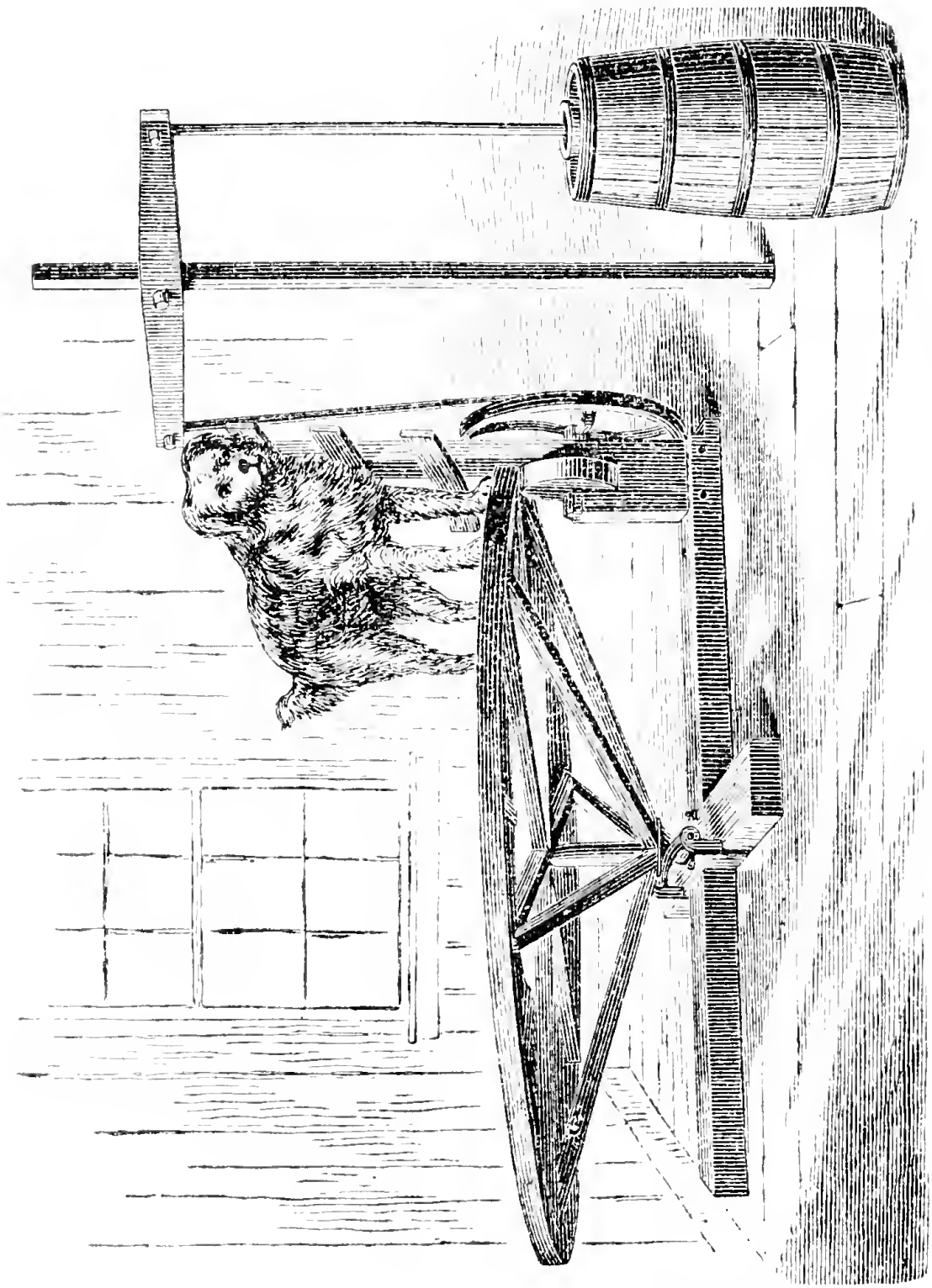
Comparison invited.

Competition defied.

Imposition not resorted to.

Keystone Animal Power.

PATENTED JANUARY 10, 1871.



Manufactured by HAWES BROTHERS, Monroeton, Pa.

The Keystone Animal Power.

PATENTED JAN. 10, 1871.

This power, we have no hesitation in saying, is the best of its kind in the market. The rapid sale it has commanded, and the universal satisfaction it has given are the best evidences of its utility and importance.

Simplicity, durability and cheapness are indispensable in a machine of this kind, and if portability be also combined, such a machine must prove useful to agriculturalists and others, who would find many uses for it besides churning, for which it is specially adapted, as running corn sheller, fanning mill, small lathe, or any light machine.

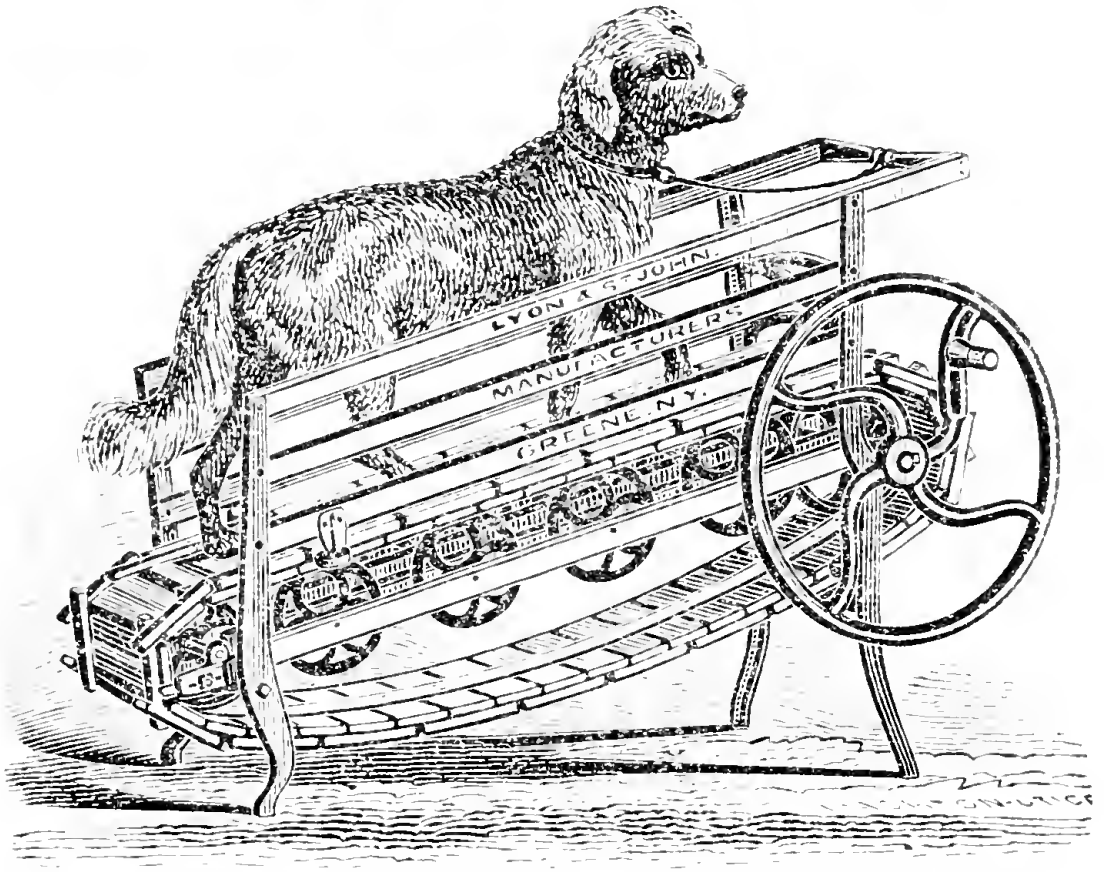
We claim for the Keystone Animal Power all these requisites. It consists of a wide rimmed wheel, upon which the dog or other small animal travels ; its central bearing being a sleeve, which runs on an inclined spindle ; the inclination of the spindle may be adjusted to the weight of the animal, as its foot is a cross-bar resting in slotted supports, which may be raised or lowered at will, so as to incline the cross bar.

The edge of the rimmed wheel rests upon a friction wheel, to the shaft of which is attached a fly-wheel, and from a crank pin on the fly-wheel the power is transmitted to the churn. We can also add an iron pulley, from which a belt may be run to drive any light machine desired. Farmers and others wishing a small power will find that the Keystone is just what they want. Send for a circular and price list.

HAWES BROTHERS, Patentees & Manufact'rs,

Monroeton, Bradford Co. Pa.

DOG POWERS!



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PLOWS, CULTIVATORS
COAL AND WOOD STOVES,
Barn Door Hangers, Pipe Skeins,
&c., &c.

ESTABLISHED IN 1840.

This CHURN POWER has been most successfully introduced by us, during the past twelve years, among the best Dairymen in the United States. We claim to make the

Heaviest, Strongest and Easiest Running Machine in the Market,

The Bearings being all Iron and nicely fitted. We are the only manufacturers of the O. G. TREAD, peculiarly adapted to the dog's foot, by which our machines gain additional power over all others.

This is truly a labor saving machine, and never fails to give perfect satisfaction. There has been more than 5,000 of these machines made and sold, within the last ten years.

You will find it for your interest, to introduce this DOG POWER among the farmers in your section.

PRICE, - - - - - $20.

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PRACTICAL DAIRY HUSBANDRY.

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THIS work will contain a Complete Treatise on Milk and its products, including Dairy Farms and Farming; Grasses and Cattle Foods; Dairy Stock, Breeding, Selection and Management; Milk, Composition, Character, etc.; Fairly History of Cheese and Butter Factories, and Mode of Organization; European and American Dairy Systems Compared; Minute Directions for the Manufacture and Care of Butter and Cheese, both at Farm Dairies and Factories, embracing the Latest Improvements, etc.

Mr. WILLARD is the most practical and popular writer on the subject, and acknowledged to be the BEST AUTHORITY in this country. Over 400 large 8vo pages, fully illustrated and handsomely printed. The only work of the kind ever published. Price not to exceed $3. Address.

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Silsby Brothers,

Formerly Oak Pail Manuf'g Co., of Seneca, Falls, N. Y.,) are the most extensive manufacturers in this country of

ALL STYLES OF

Oak Butter Pails, Firkins, Tubs & Water Pails.

We are the Sole Manufacturers of

Westcott's Patent Return Butter Pail.

Which Brings from four to Seven Cents More Per Pound for Butter in New York City Market than any Other Package.

Dealers, Send for a Price List.

Goods Sold to the Trade Only.

Address

Silsby Bros,

Belmont, Allegany Co., N. Y.

Branch Warehouse at Binghamton, N. Y.

SALESMEN WANTED!

TO SELL THE

EUREKA BUTTER WORKER

IN ALL SECTIONS OF THE COUNTRY.

Its Simplicity and Practicability, makes it very easy of introduction to the public, and its necessity, has long been apparent to batter makers. Its cheapness and durability with its convenience, will make them sell rapidly when introduced. Practical batter makers preferred to sell them, and those who have bought for their own use, or have used them preferable, as they can speak knowingly of their many advantages, but as it is not always convenient to get such at first, I will sell them either at wholesale or retail, to the first responsible applicant from any section of the country, if the territory of the patent has not been disposed of. Men or women can do well to sell them, also Practical Hints on Dairying or Manual for Butter Makers, on the generous terms offered on both.

I offer also to sell the EXCLUSIVE RIGHT of the

EUREKA BUTTER WORKER PATENT

in territory, that is so remote for me to give the business the necessary attention.

The reasons are obvious. I cannot canvass the whole United States myself, neither can I furnish the necessary Butter Workers. Parties with a small capital can do well by securing the exclusive right to manufacture and sell this worker in a State, County, or even in a Town. Any wood workman can make them by hand at a large profit, or they may be made by common machinery. The bowls may be purchased in every locality, or ordered direct from any bowl factory. The iron circles and

slides may be made at any foundry; the hooks and swivels at any maleable iron works, all of which I will furnish at manufacturers cost, or patterns of the same.

I also offer to sell the exclusive right of territory to responsible parties to sell the worker in, who do not wish to manufacture, or to get them manufactured; I will furnish them with workers all complete, at cost prices, or I will sell workers without bowls, or will sell workers at wholesale or retail, with or without bowls.

Retail prices with bowls all complete delivered at the Railroad, packed and marked.

No. 1 will take bowls up to 18 inches across the top, $7.00
No. 2 " " " 2 feet " " 7.50
No. 3 will take the largest of bowls..... 8.00

Without bowls, the price of bowl less

Circle Plates for bowls 10 cents.

The large machines will take small bowls, but the small machines will not take large bowls.

For sample machine I require the full retail price, then when more are ordered to sell, I will make the wholesale discount on it, making it just as cheap as the others.

This I am oblidged to do, to secure dealers and myself from loss by parties representing a desire to sell, and ordering a sample machine merely to get one for their own use. Send retail price for sample machine, or return postage stamp for wholesale prices, or terms of territory, which are very liberal Give plain shipping directions by what line, State, County, Town or Station and Post Office

Address J. P. CORBIN,
Whitney's Point, N. Y

NOTE.—To the world in general and to butter makers in particular, I respectfully say that I have stated simple facts in this little book, and hope that you have read it carefully, or will; and that you may be benefitted thereby. It is not founded on loose statements and opinions, nor on untried theories; but every suggestion that is made in it has been proved and tested, and the most successful ways described.

Any explanation or further information will be given upon application, if accompanied with return P. O. stamp, and within my ability; if not, I will give reference to those who are posted, as my acquaintance with practical dairymen is extensive in several States, and in the best dairying sections of the country.

Butter making has always been my business, and for the last ten years have been connected with the Butter Worker business, and now intend to make it a specialty for years to come. Correspondence invited, whether in the form of inquiry or information imparted, results of experiments, etc., or regarding new improvements for dairy purposes. And if you feel interested and disposed to test the truth of my statements by sending an order for at least one sample Eureka, I will be pleased to send the machine to any address on the receipt of its price, and when thoroughly and fairly tested, if it does not show for itself many good qualities and corroborate what I have stated regarding it, I will have nothing to say in defense, and will not ask for a second order.

Try the machine, and you will acknowledge that it possesses more *good* qualities and real merits than I have claimed for it.

This world each day in wisdom grows;
Then hold no more your bowl on bench or table,
Nor work your butter with the old-hand ladle.

Inventions made a Lever Ladle,
And a stool with swinging table.
Which brings new joys and ends all woes

Your obedient servant,

J. P. CORBIN

WHITNEY'S POINT, N. Y., Sept., 1871.

PRACTICAL HINTS

ON

DAIRYING,

OR

MANUAL

FOR

BUTTER MAKERS.

BY

JOHN P. CORBIN,

Whitney's Point, N. Y.

1871

Entered according to Act of Congress in the year 1871, Aug. 4th, by JOHN P. CORBIN, in the office of the Librarian of Congress, at Washington.

Eureka Butter Worker.

[illegible] P. Conrad, Whitney's Point, Broome Co., N. Y.

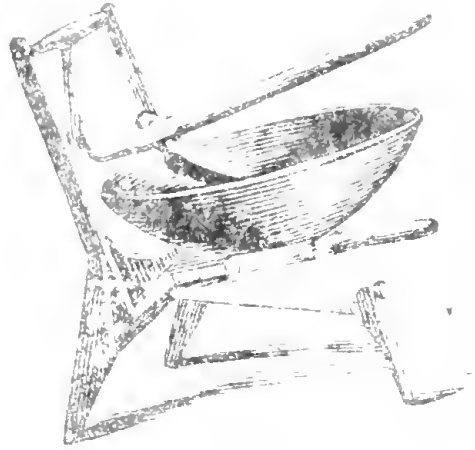
Saves Labor, Time,

AND

MONEY,

BY A

LEVER LADLE,



The Bowl

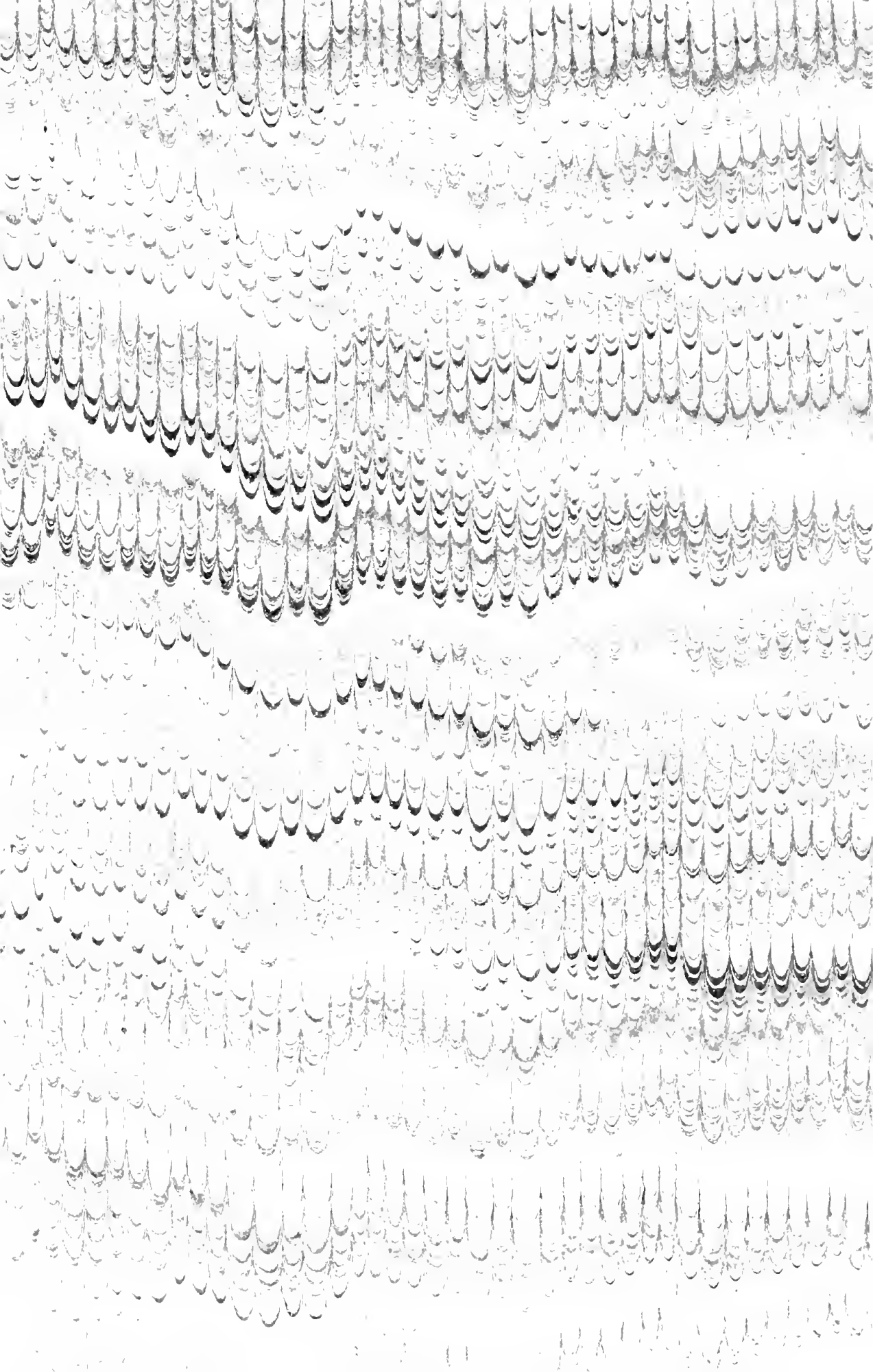
REVOLVES,

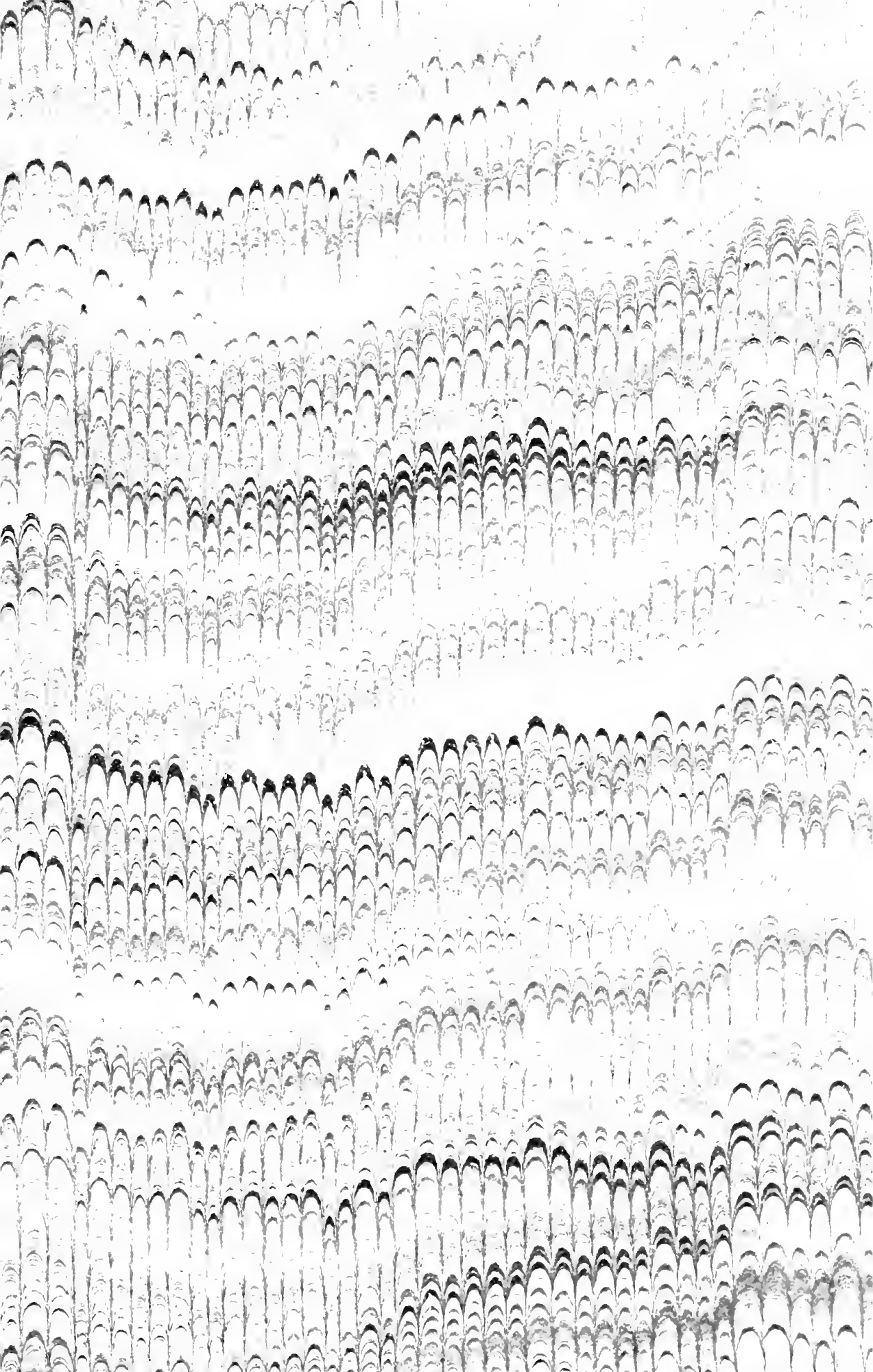
Is Easily Drained.

READILY REMOVED,

Embodies all the Principles of Working Butter,

AND WILL ALWAYS GIVE PERFECT SATISFACTION





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